

PURDUE UNIVERSITY BULLETIN

NORTH CENTRAL CAMPUS



ANNOUNCEMENTS

1976-78

1976

[illegible]

Fall Semester 1976

August 30

Classes begin

November 25

Thanksgiving vacation begins

November 29

Classes resume

December 15

Classes end

December 16

Finals begin

December 21

Semester ends

1977

[illegible]

Spring Semester 1977

January 10

Classes begin

March 7-12

Spring vacation

April 30

Classes end

May 2

Finals begin

May 6

Semester ends

May 12

Commencement

Summer Sessions, 1977

May 9-June 10

First Intensive Session

June 13-August 5

Regular Session

June 13-July 8

Second Intensive Session

July 11-August 5

Third Intensive Session

August 8-August 19

Fourth Intensive Session

The illustrations on the cover depict the John Barker mansion where Purdue North Central began in 1948 and the Library-Student-Faculty building on the present 260-acre campus in Westville, Indiana.

North Central Campus

Announcements for the Years 1976-78



**PURDUE UNIVERSITY
PUBLISHED BY THE UNIVERSITY
WESTVILLE, INDIANA**

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PURDUE UNIVERSITY

Regional Campus Administration

West Lafayette, Indiana

OFFICERS OF ADMINISTRATION

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Regional Campus Administration

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N. M. PARKHURST, M.S.	Registrar

North Central Campus Administrative Staff

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G. William BACK, B.S.	Director of Business and Administrative Services
Harvey D. MOORE, Ph.D.	Dean for Student and Community Services
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DAVID G. KULAKOWSKI, A.A.S.	Computer Center Manager
JOHN T. COGGINS, M.A.	Student Affairs Counseling Center Officer

General Information

PURDUE UNIVERSITY is the Indiana link in a nationwide chain of 68 land grant colleges and universities. It is a people's university grown out of the demand of the American people that higher education be the birthright of the many, not the privilege of the few.

Long pre-eminent in agriculture, engineering, and science, Purdue has more recently become strong in the humanities and technology.

The year 1969 marked the centennial of Purdue University. From an institution of six instructors and 39 students, Purdue has grown to a major university with a faculty of over 2,200 and a student body of more than 40,000 on four campuses and at Indiana University-Purdue University at Indianapolis (IUPUI).

LOCATION

Purdue University has, in addition to its main campus in West Lafayette, established a series of regional campuses for the purpose of offering educational opportunities in the major population areas of Indiana. The North Central Campus is an outgrowth of the former Barker Memorial Center which was located in Michigan City. The North Central Campus serves communities in the north central part of the state. It is located on a 262-acre site at the junction of the Indiana Toll Road and U. S. 421 at Westville.

HISTORY OF THE NORTH CENTRAL CAMPUS

Following World War II Purdue University started offering courses in facilities loaned to the University by the Michigan City and LaPorte schools. The programs in each of these areas grew, and in 1948 the Barker Welfare Foundation made available to the University the John Barker mansion. All of the area classes were consolidated in this fine old structure in the spring of 1949. Through the 1950's enrollments at the Barker Memorial Center continued to grow, as did the population of the north central region of the state. By the early 1960's it was evident that this part of the state was due for a population boom and significant industrial expansion, and Purdue began to make plans for a new regional campus that could more adequately serve the area.

In May of 1962 Purdue University, through the Ross-Ade Foundation, purchased 160 acres in LaPorte County at a location that could best serve the Tri-City area of LaPorte, Michigan City, and Valparaiso.

With the site available, serious plans started on the development of the first building for the new campus. The Education building, containing 90,000 square feet, provided modern academic facilities when it opened its door in 1967.

In the short span of time since 1967, the North Central Campus has undergone many changes. They are all indicative of the rapid growth of the area it serves, and the increasing educational demands the campus must meet.

Additional parcels of land have been added to the original holding of 160 acres making a total acreage of 262 acres.

In September 1968, construction was begun on a \$750,000 addition on the east side of the building. One year later the addition was ready for occupancy.

In conjunction with the addition, 7,000 square feet of space in the basement of the original structure was completed. It houses the data processing equipment, Admissions-Financial Aids and Registration offices, classrooms and the equipment for TV reception and transmission.

In 1969, the Indiana General Assembly appropriated funds for construction of a second building. The Library-Student-Faculty building was dedicated in March 1975. It encompasses 100,000 square feet of space, 30,000 of which serve as the new library facility. The remainder of the area is used for classrooms, faculty offices, cafeteria, bookstore and student recreation facilities.

Prestige of the North Central Campus has been further enhanced with the North Central Association of Colleges and Secondary Schools award of an operationally separate accreditation from the Purdue system. Purdue North Central is also accredited by the National League for Nursing.

Accreditation attests to the quality of the faculty and staff, the excellence of courses and curricula, and the adequacy of facilities in the goals of this campus.

ORGANIZATION

The North Central Campus operates as an integral part of Purdue University. Faculty members hold their appointments in Purdue departments and teach courses under departmental control. With the exception of courses in the School of General Studies, course numbers and content are the same for all campuses of the University. Faculty members receive promotion through a university-wide promotion system.

PURPOSE AND FUNCTION

Purdue University North Central Campus is dedicated to service in the land grant tradition. As a regional campus, Purdue North Central continues this tradition by bringing educational opportunities of a great University to a constantly increasing number of students who might otherwise not be able to share the benefits of the University.

It is the function of the Purdue North Central Campus to provide courses and programs for regular full-time university students working toward degrees. At the same time, it is also the purpose of the institution to make similar opportunities available to part-time students, many of whom are pursuing their educational objectives in the evening.

As a member of the community of northern Indiana, Purdue North Central has a strong obligation to provide educational opportunities, both credit and noncredit, related to the nature of the population and the social, economic, and industrial development of the area. In accordance with the long-standing policy of the Board of Trustees of Purdue University, all educational services and programs of the University are available and open to all academically qualified individuals without any discrimination whatsoever with respect to creed, national origin, race, or sex.

Purdue is an equal access/equal opportunity university. In compliance with Title IX of the Education Amendments of 1972, no one will be denied admission or employment at the University on the basis of sex. In addition, no student or employee will be excluded from participation in, be denied the benefits of, or be subjected to discrimination in any University educational program or activity on the basis of sex.

PROGRAMS

Although academic work at a number of different levels is offered at Purdue North Central Campus, primary emphasis is on freshman and sophomore curricula requirements offered by the University which lead to a Bachelor of Science or Bachelor of Arts degree.

Two-year, terminal, associate-degree curricula in nursing and various fields of technology are also a major part of the offerings.

Selected graduate courses in a limited number of subject-matter fields, primarily to serve the needs of area teachers, are regularly scheduled at the campus.

Programs, conferences, and short courses, mostly noncredit, related to the interests of the people in the communities served by the Purdue North Central Campus are offered through the Office of Continuing Education.

A nondegree status is available to students who are either unsure of themselves or their goals, or to those who are interested in taking a course or two for personal benefit.

The Purdue North Central Community College, has been formally approved by the faculty of Purdue North Central and the Board of Trustees of Purdue University. The purpose of the Community College is to make post high school educational opportunities more accessible to a broader range of students. A number of new curricula have been, and are being, initiated in the Community College. Among these are a bridge program designed to help students bridge the gap from high school to college, and a secretarial arts and a general business program.

Many students who do not plan to complete a degree at any of the campuses of Purdue University use the North Central Campus to obtain one or two years of credits for transfer to other universities. Since the work taken at the North Central Campus carries regular Purdue University credit, transferability to other universities presents no problem.

Admission

GENERAL REQUIREMENTS

ALL PERSONS wanting to take advantage of the opportunity for higher education at the North Central Campus of Purdue University must file an application for admission. Requests for information and application forms should be addressed to the Office of Admissions, Purdue University, North Central Campus, Junction U. S. 421 and Indiana Toll Road, Westville, Indiana 46391. Students pursuing the baccalaureate and associate degree programs must be high school

graduates. A prospective student should complete the application according to instructions and then forward the form to the high school from which he is to be or already has been graduated. The high school should then complete the application and return it to the Office of Admissions, Purdue North Central Campus, Junction U. S. 421 and Indiana Toll Road, Westville, Indiana 46391. High school students should make application during their seventh semester of high school, or as soon as possible thereafter. High school graduates should make application immediately. This enables the University to evaluate fully an applicant's eligibility for consideration and to notify the applicant at an early date of the action taken, thus allowing the applicant to make his educational plans.

An individual's eligibility for consideration will depend upon many factors, among which are: (1) subject matter requirements for the school or program to which he is applying; (2) high school class standing; (3) College Entrance Examination Board test results; (4) high school comments and recommendations; (5) previous college work, if any; and (6) other personal information.

ADMISSION REQUIREMENTS

An admissions decision is made on an evaluation of the student's total record. Quality requirements include subjects taken, grades in academic courses, high school rank, test scores, and counselor's evaluation.

Quality Guidelines are listed on Page 9.

TEST SCORE REQUIREMENTS

SAT is required and should be taken preferably in the spring of the junior year. (Out of state applicants may substitute ACT if it is the state test.)

CEEB achievement tests in English, math, chemistry (substitute another science if student has not had chemistry) are highly recommended for students planning to enter science and engineering. These tests should be taken preferably in the spring of the senior year.

ALTERNATIVE ACTIONS ON APPLICATIONS

On the basis of the factors considered, action on the individual's application may be one of the following:

1. Granted unqualified regular admission—this means that the applicant has met all entrance standards and requirements for admission.
2. Admitted to the Bridge Program of the Community College—this applies to the applicant whose academic background and preparation do not meet the entrance standards and/or requirements, but who the University feels has a reasonable chance of gaining regular admission at a later date.
3. Admission on probation—this means that the applicant is admitted with the warning of the University that he or she is academically deficient. If the applicant does not achieve a 3.2 average on a 6.0 system in the first semester the student will be academically dismissed.
4. Admission denied.

Any admission to the University is provisional pending the receipt of all required student information. The University reserves the right to cancel any admission if a student fails to provide all necessary credentials.

QUALITY GUIDELINES
REQUIRED SUBJECT MATTER

SCHOOL	Math	Science	Eng.
Engineering	3 sem. alg. 2 sem. geom. 1 sem. trig.	2 sem. lab	6 sem.
Science, Pharmacy and Forestry	3 sem. alg. 2 sem. geom. 1 sem. trig.	2 sem. lab	6 sem.
Management	6 sem. academic math	2 sem. lab	6 sem.
Humanities, Social Science and Education	2 sem. alg. 2 sem. geom.	2 sem. lab	8 sem.
Consumer & Family Sciences	2 sem. alg. 2 sem. geom.	2 sem. lab	6 sem.

INDIANA RESIDENT QUALITY REQUIREMENTS

Applicants should be upper-half quality students. Providing other factors are favorable, upper-half quality usually is met by rank in the upper half of the high school graduating class and may be met with SAT scores in the upper half of the national norms (V + M totaling 950).

Agriculture and Preveterinary Science and Medicine	2 sem. alg. 2 sem. geom.	2 sem. lab	6 sem.
Technology	2 sem. alg. 2 sem. geom.	2 sem. lab	6 sem.
Physical Education for Men	None	2 sem. lab	6 sem.

Applicant must be an upper two-thirds quality student. Upper two-thirds quality is usually met by rank in the upper two-thirds of the high school graduating class or SAT scores (V + M totaling 750 or above).

Community College	High School Graduation or Equivalent
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QUALITY REQUIREMENTS

OUT OF STATE QUALITY REQUIREMENTS

Applicants should be upper-third quality students. Providing other factors are favorable, upper-third quality usually is met by rank in upper third of high school graduating class and may be met with test scores in the upper third of national norms (SAT V + M totaling 1050 or an ACT composite totaling 22).

TRANSFER STUDENTS

An applicant transferring from another college or university must fulfill the following requirements in order to be considered for admission:

1. Submit an application for admission on the prescribed form through the high school from which he was graduated, including the SAT test results.
2. Forward an official transcript of work done in institutions previously attended to the Office of Admissions at the North Central Campus.

3. Transfer students must meet subject matter requirements, have a strong C average (out-of-state students B), and be in good standing at all schools attended.

Credit earned at other institutions will be evaluated in terms of how it fulfills the graduation requirements at Purdue University. Evaluation of credit is completed after a student is admitted to the University.

NONDEGREE STUDENTS

Persons who desire to take advantage of the instruction in any of the departments of the University without undertaking one of the regular plans of study and without becoming a candidate for a degree may be admitted as nondegree students. Such students must present evidence that they are prepared to undertake the work desired and must progress satisfactorily in their work.

Admission as a nondegree student is for one semester only and any further enrollment must be approved by the Office of Admissions. A maximum of 11 credit hours may be taken in any one semester and a maximum of 24 credit hours may be taken while classified as a nondegree student.

A personal interview with a member of the Office of Admissions staff prior to admission as a nondegree student is encouraged. Any student who is registered in another college or university and wishes to attend Purdue during the same semester must submit a letter from the other institution approving the specific courses to be taken at the North Central Campus. All students who have been previously enrolled in another institution must have a letter of good scholastic and social standing on file with the Office of Admissions prior to enrollment. Application for admission as a nondegree student should be made to the Office of Admissions at the North Central Campus.

RE-ENTRY STUDENTS

Any person in good standing who has formerly attended Purdue but has not been in attendance for a semester or more must submit an application for re-entry obtainable from the Registration Office. Each individual situation will determine the status of the person's eligibility for re-entry.

RE-ADMISSION OF STUDENTS

Any person who has been formally dropped from the University for academic reasons and wishes to re-enter must make application for re-admission to the Scholastic Delinquencies and Re-admissions Committee. Forms for initiating this procedure are available in the Student Affairs/Counseling Center Office at the North Central Campus.

ADVANCED PLACEMENT AND ADVANCED CREDIT

What Is Meant by Advanced Placement and Advanced Credit?

1. Advanced placement means that a student is placed in an advanced level course but no credit toward a degree is awarded for prior courses.
2. Advanced credit means that college credit is established in one or more subjects and the total credit is recorded on the student's record.

Who Should Consider Establishing Advanced Credit?

The student who has taken a strong college preparatory program, has achieved at a high level, and has strong test results should seriously consider the possibility of establishing advanced credit. Personal factors as well as your academic record should be considered.

How Is Advanced Placement and/or Advanced Credit Established?

Advanced credit or advancement placement can be established by any of the following methods.

1. The Purdue Advanced Credit Examinations.

The Purdue Advanced Credit Examinations will be given during the summer advanced enrollment program (a student’s Day on Campus) and during the delayed enrollment period just before classes begin. A description of the subject matter to be covered in the examination, test dates and locations, procedures to follow in applying to take the tests, and general instructions will be mailed to each student qualified to be considered for advanced credit. Any questions about advanced credit should be directed to the director of the counseling staff of your school.

2. The College Board Advanced Placement Program.

Credit can be established on the basis of test results taken at the completion of the advanced placement course in high school. The score required to establish credit varies according to the test.

Subject Area	AP Score	Purdue Credit Granted
Biological Sciences	4 or 5	3 semester hours
Chemistry	4 or 5	8 semester hours
English	3, 4, or 5	3 semester hours
History		
American	3, 4, or 5	6 semester hours
European	3, 4, or 5	3 semester hours
Math	3, 4, or 5	5 to 10 semester hours depending on the grade
Modern Language	3, 4, or 5	At least 6 semester hours
Physics	3, 4, or 5	4 semester hours

College Level Examination Program (CLEP)

The College Level Examination Program is designed for the purpose of evaluating nontraditional college-level education such as independent study, correspondence work, and credit earned from nonaccredited institutions.

1. General examinations

No credit will be given on the basis of the general examination. Transfer students who previously attended a nonaccredited institution may take the general examination. If an average score of 500 or above is received on the five tests, the credit established at the nonaccredited institution may be evaluated for credit at Purdue.

2. Subject matter examinations

Purdue credit may be established by taking certain subject matter examinations. A list of examinations approved by the faculty and the score required to establish Purdue credits are available upon request from the Admissions and Financial Aids offices.

AUDITING CLASSES

Courses may be audited. No grades or credits are received. Attendance in class is permissible when the regular class fees are paid and the individual has declared himself as a visitor.

RESERVE OFFICER TRAINING

Men and women students planning to transfer to the West Lafayette Campus are now eligible for a two-year advanced ROTC program leading to a commission in the Army, Navy, and Air Force. The program is available to anyone having four full academic semesters remaining on the West Lafayette Campus, including graduate school.

Students applying for the two-year program and accepted by the service concerned attend a six-week summer training camp during the summer immediately preceding their planned entry into ROTC classes, which may be either in the fall or spring semester. This six-week training substitutes for the first two years of basic ROTC. Students are paid approximately \$450 during this six weeks plus transportation, housing, and all meals.

Two-year students receive the same benefits as four-year ROTC students. These include \$100 per month allowance, free uniforms, and free military textbooks. Scholarships are also available which pay full tuition, books, and fees plus \$100 per month tax-free allowance. Flight training is available in the last year for those who are interested and qualify. This consists of about 36½ hours of flight instruction and 35 hours of ground school at no cost to the student. Upon completion the student may be granted a private pilot's license.

There is no obligation incurred in applying for this program. Applications are accepted at any time up to about April 1 preceding the six-week summer training.

For further information and additional details, you may call or write:

Professor of Military Science
U. S. Army ROTC
Purdue University
West Lafayette, Indiana 47907
Telephone: 749-2275, 749-2811

Professor of Aerospace Studies
U. S. Air Force ROTC
Purdue University
West Lafayette, Indiana 47907
Telephone: 749-2614

Professor of Naval Science
U. S. Naval ROTC
Purdue University
West Lafayette, Indiana 47907
Telephone: 494-8157

Financial Aid

The Financial Aid department of the Admissions-Financial Aid Office will attempt to provide aid to eligible students who require financial assistance to attend Purdue North Central.

APPLICATION PROCESS

In order to be considered for financial aid a student must gain admission as a degree-seeking student at Purdue North Central and must complete the appropriate application forms. The priority filing date for those seeking aid for the academic year commencing in the fall semester is March 1. Applications submitted after June 1 can be considered only for the spring semester. An application for financial aid must be submitted for each year that aid is requested.

AVAILABLE FINANCIAL AID

The chart below lists the types of aid available, the qualifications for each, and the required application forms.

Financial Aid

TYPE OF AID	QUALIFICATIONS	REQUIRED FORMS
Basic Educational Opportunity Grant	U.S. citizen Greatest financial need 6 or more semester hours	Basic Educational Opportunity Grant application
Indiana State Scholarship	U.S. citizen Indiana resident planning to attend a college or university within Indiana Financial need High scholastic achievement 12 or more semester hours First-time applicant must be entering college freshman under 24 years old	Indiana State Scholarship application by December 1 Parents' Confidential Statement (PCS) by January 15

Indiana Educational Grant	U.S. citizen Indiana resident planning to attend a college or university within Indiana Financial need 12 or more semester hours First-time applicant must be entering college freshman under 24 years old	Indiana Educational Grant application by December 1 Parents' Confidential Statement (PCS) by January 15
Child-of-Disabled-Veteran Grant	U.S. citizen Indiana resident Either parent suffered a service-connected disability to which the VA will attest Financial need is not a consideration	Child-of-Disabled-Veteran application to be filed 6 weeks prior to the start of the semester Verification from Veterans' Administration 4 weeks prior to the start of the semester
Purdue North Central Scholarship	U.S. citizen Indiana resident 12 or more semester hours High scholastic achievement Financial need	Purdue North Central aid application by March 1 Parents' Confidential Statement (PCS) by March 1
Supplemental Educational Opportunity Grant	U.S. citizen Greater financial need 6 or more semester hours Academic or creative promise Award must be matched dollar-for-dollar with another type of university-administered aid	Purdue North Central aid application by March 1 Parents' Confidential Statement (PCS) by March 1
National Direct Student Loan	U.S. citizen Financial need 6 or more semester hours	Purdue North Central aid application by March 1 Parents' Confidential Statement (PCS) by March 1
College Work/Study	U.S. citizen Financial need 6 or more semester hours Potential to succeed academically	Purdue North Central aid application by March 1 Parents' Confidential Statement (PCS) by March 1

Nursing Grant	U.S. citizen Greater financial need 6 semester hours or more Nursing Technology major	Purdue North Central aid application by March 1 Parents' Confidential Statement (PCS) by March 1
Nursing Loan	U.S. citizen Financial need 6 semester hours or more Nursing Technology major	Purdue North Central aid application by March 1 Parents' Confidential Statement (PCS) by March 1

Registration

ADVANCE REGISTRATION

CURRENT STUDENTS should preregister for fall, spring, and summer sessions at announced times. New students should preregister at the times specified by the registration officer. Advance registration eliminates standing in line and assures preferential scheduling.

DELAYED REGISTRATION

For students who are unable to preregister, a registration period is held just prior to the beginning of classes. Consult the current semester schedule for dates and times.

LATE REGISTRATION

The late registration period for the fall and spring semesters ends one week after the first day of classes. In the summer session, the late registration period closes three days after the first day of classes. Late registration fees are explained on page 18.

DROPPING AND ADDING COURSES

A student may add a course to his schedule during the first week of classes (first three days of summer school). In order to effect a withdrawal from any class, a student must secure the signature of his adviser. He must turn in the signed drop-add card to the Registration Office at the time of withdrawal. Discontinuance of class attendance is not the basis for withdrawal, and students who do not notify the office when they plan to withdraw will be given a failing grade in each course involved. To drop a course, consult the fee refund schedule on page 18 and the directed grades explanation on page 20.

TRANSFER OF ENROLLMENT TO THE WEST LAFAYETTE CAMPUS

Upon the completion of any semester or summer session a student may transfer his enrollment from the North Central Campus to the West Lafayette Campus. To initiate this process the student must report to the Registration Office and complete the necessary form. Following this procedure he will receive an "Authorization for Enrollment" form from the West Lafayette Campus along with instructions for registration. Only students attending on regular status may transfer to the West Lafayette Campus.

"Unclassified" students and Community College students must be admitted to a school before they are eligible to transfer. It is not recommended that a student transfer at mid-year.

Student Services

COUNSELING CENTER/STUDENT AFFAIRS OFFICE

The Counseling Center/Student Affairs Office offers services in the following areas:

(1) *Personal Counseling*

Individual counseling is available for a variety of problems which may cause personal distress or maladjustment.

(2) *Vocational Counseling*

Career counseling is available for individuals who are dissatisfied with their present major in college and/or those individuals who have not clarified their immediate or long-range vocational goals.

(3) *Group Counseling*

Group facilitators are available on a semester basis to aid individuals interested in the "values clarifications" process. A maximum of sixteen students can be accommodated.

(4) *Educational Counseling*

The Counseling Center provides services to students experiencing difficulty in their academic work. Assistance is available in study techniques, scheduling of study time and other problems related to academic performance. The center acts as advisor to non-degree students.

(5) *Testing*

Individual tests relating to achievement, aptitude, personality, mental ability and interest are available upon request. Also a specially developed test battery is available at a fee of \$5.00 for enrolled students and \$25.00 for non-students.

The goal of the Counseling Center is to help the individual attain a stage of development where he can honestly look at himself and eventually reach a point where there is some element of satisfaction in what he sees.

(6) *Placement and Housing*

Purdue North Central provides information regarding Placement. This information is available in the Student Affairs/Counseling Center Office.

A weekly placement and housing list is published by the Counseling Center. The placement listings contain both part and full time employment. Some effort will be made to have interviews on campus with prospective employers in the spring.

(7) *Student Activities*

Any registered student is eligible to participate in the activity program. Student input into the activity program is encouraged and appreciated. The F.A.C.E. Committee (Fine Arts, Convocations and Events) coordinates the programming and is open to suggestions. In addition, a number of clubs and organizations are active at the campus and welcome your participation.

(8) *Student Newspaper*

The Counseling Center/Student Affairs staff act as advisor and consultant to the student newspaper, the Campus Rapport. All students are encouraged to indicate their interest in joining the newspaper staff. Editions of the paper are bi-monthly and staffers have the opportunity to gain valuable newspaper experience.

(9) *Discount System*

All faculty, staff, and students obtain a discount card in the Counseling Center. These cards entitle the bearer to reduced rates at over 40 local merchants. Cards cannot be replaced.

(10) *Intramurals*

A full complement of indoor and outdoor activities will be provided for students: softball, football, basketball, tennis, etc., tournaments are planned. In addition pool, ping-pong, pinball, etc. tourneys will be staged. Student input is encouraged in the program development.

(11) *Intercollegiate Athletics*

(a) A golf team is open to all students carrying 11 credits. Home matches are played at Beechwood Country Club in LaPorte. This year's team will play in five tournaments and ten dual matches.

(b) A tennis team is planned. As many matched as possible will be played against local competition. Participants must carry 12 credits.

INSURANCE

Low cost University accident and health insurance similar to the policy offered at the West Lafayette Campus is offered annually to all students carrying an academic load of eight hours or more. Students may take advantage of the opportunity at the beginning of each semester.

Fees

FEES ARE SUBJECT to change by the Board of Trustees without notice. All fees are payable at the time of registration each semester.

Course Fees. Purdue North Central has a fee structure different from that at the West Lafayette Campus. Fees are based on an established amount per credit hour, plus a laboratory fee if the course includes laboratory work.

	Resident	Nonresident
Undergraduate	\$21 per credit hour plus \$5 per lab hour	\$41 per credit hour plus \$5 per lab hour
Graduate	\$26 per credit hour plus \$5 per lab hour	\$51 per credit hour plus \$5 per lab hour

N.B.—Undergraduate students pay undergraduate fees; graduate students pay graduate fees regardless of the course number or the objective for which the course is taken. (A graduate student is one who has been awarded a baccalaureate degree.)

Costs for two semesters (18-credit hours each) for undergraduate students:

	Indiana Residents	Nonresidents
University fees*	\$781	\$1,506
Books and supplies	165	165
Total	<u>\$946</u>	<u>\$1,671</u>

This total does not include the cost of transportation, housing and meals which will depend upon an individual's desires.

Late Registration Fees. The charge for the late registration is \$5 per course with a maximum of \$25, beginning on the first day of classes.

Breakage Fees. Course fees include the cost of normal breakage and wear and tear on equipment. An additional charge will be levied against individuals for excessive waste, loss, or breakage that may occur. Such special charges must be paid before course credit will be given.

Diploma Fees. All students must pay a \$10 diploma fee not less than 30 days before the close of the semester in which they expect to complete their work for an associate degree.

Refunds. Course fees will be refunded under any one of the following conditions:

Period of Withdrawal	Refund Percentage	
	Semester	Summer Session
First week	100	100
Second week	60	40
Third week	40	0
Fourth week	20	0
Fifth week	0	0

*Varies slightly depending upon the courses selected.

To be eligible for a refund, the student must notify in person the registration officer and complete the necessary withdrawal procedures.

Special Examination Fees. To establish credit by examination, a nondegree student or a student currently enrolled carrying less than 12 credit hours must pay a fee of \$25 per course.

Withdrawal. In order to effect a withdrawal from any class, a student must notify his assigned faculty adviser and registration officer at the time of withdrawal. Discontinuance of class attendance is not the basis for withdrawal, and students who do **not** notify the Registration Office when they plan to withdraw will be given a failing grade in each course involved.

Grading

ASSIGNING OF GRADES

INSTRUCTORS WILL ASSIGN each student a grade for each course in which he is enrolled at the close of a session. The student shall be responsible for the completion of all required work by the time of the last scheduled meeting in the course unless his assignment to the course has been properly cancelled. The grade shall indicate the student's achievement with respect to the objectives of the course.

For Credit Courses:

A—highest passing grade.

B

C

P—passing grade for the pass/not pass option.

D—lowest passing grade; passing minimal objectives of the course.

E—conditional failure; failure to achieve minimal objectives, but only to such limited extent that credit can be obtained by examination or otherwise without repeating the entire course. This grade represents failure in the course unless and until the record is duly changed within one semester. It cannot be changed to a grade higher than a D.

F—failure to achieve minimal objectives of this course. This student must repeat the course satisfactorily in order to establish credit in it.

N—not passing for the pass/not pass option. Issued when the student's grade would be a D or F under the letter grade option.

Pass/Not Pass Option. The pass/not pass option provides students with the opportunity to broaden their educational foundations with minimal concern for grades earned. The option is open to all students in the University subject to the regulations of the school in which the student is enrolled. Subject to the regulations of his school, a student may elect this option in any course which does not already appear on his academic record and in which he is otherwise eligible to enroll for credit with letter grade. A student may not elect this option for more than 20 percent of the total credit hours required for his graduation.

A student who is enrolled in a course under this option has the same obligations as those who are enrolled in the course for credit with letter grade. When the instructor reports final grades in the course, he will report that any such student who would have earned a grade of A, B, or C has passed the course, and that any other such student has not passed.

For Zero Credit Courses (including thesis research but not including laboratory portions of courses in which, for purposes of scheduling, separate course designation and separate class cards are used for the laboratory sections):

S—satisfactory; meets course objectives.

U—unsatisfactory; does not meet course objectives.

For Incomplete Work, either credit or noncredit:

O—incomplete; no grade; a temporary record of work which was interrupted by unavoidable absence or other causes beyond a student's control, and which work was passing at the time it was interrupted. An instructor may require the student to secure the recommendation of the student affairs officer that the circumstances warrant a grade of incomplete. On the record a grade of 0 will be equivalent to a W unless and until the record is duly changed within one semester or the next semester the course is offered.

OP—incomplete, for pass/not pass option. Has the same provisions as the 0 for letter grade option.

Directed Grades. The registration officer is directed to record the following grades and symbols under special circumstances:

W—withdrew; a record of the fact that a student was enrolled in a course and withdrew or cancelled the course after the last date for late registration.

WF—withdrew failing; a record of course cancellation after the last date for canceling a course without grade, at which time, according to a statement from the instructor, the student was not passing in his work. This grade counts in all respects as a failing grade. A grade of WF may be directed by the dean for academic services, or the Committee on Scholastic Delinquency and Re-admission when a student is dropped from a course for serious scholastic delinquency.

GOOD STANDING

For purposes of reports and communications to other institutions and agencies and in the absence of any further qualification of the term, a student shall be considered in good standing unless he has been dismissed, suspended, or dropped from the University and has not been re-admitted.

SCHOLARSHIP INDEXES

The scholarship standing of all regular students enrolled in programs leading to an undergraduate degree shall be determined by two scholarship indexes, the semester index and the graduation index.

1. The semester index is an average determined by weighing each grade received during a given semester by the number of semester hours of credit in the course.
2. The graduation index is a weighted average of all grades received by a student while in the curriculum in which he is enrolled plus all other grades received in courses taken in other curricula offered by the University and properly accepted for satisfying the requirements of the curriculum

of the school in which the student is enrolled. With the consent of his adviser, a student may repeat a course. In the case of courses which have been repeated, or in which conditional grades have been removed by examination, or for which a substantially equivalent course has been substituted, the most recent grade received shall be used.

3. For the purpose of averaging, each grade shall be weighed in the following manner:

A—	6 x semester hours = index points
B—	5 x semester hours = index points
C—	4 x semester hours = index points
D—	3 x semester hours = index points
E, F, WF—	2 x semester hours = index points
O, W not included	

CLASSIFICATION

Freshman	0-30 hours
Sophomore	31-60 hours
Junior	61-90 hours
Senior	91 hours or above

GRADUATION INDEX REQUIREMENT

For the associate degree: a minimum graduation index of 3.90 shall be required for graduation.

For the bachelor's degree: a minimum graduation index of 4.00 shall be required for graduation.

SCHOLASTIC PROBATION

Any student except nondegree (temporary) students shall be placed on probation if his semester or graduation index at the end of any semester is less than that required for a student with his classification as shown in Table A. A student on probation shall be removed from that status at the end of the first subsequent semester in which he achieves semester and graduation indexes equal to or greater than those required for a student with his classification as shown in Table A. Any grade change due to a reporting error will require re-consideration of probation status.

Nondegree (temporary) students who do not achieve academic standing required of regular students may not be permitted to continue in attendance. Probation is concerned only with the regular semesters and not with the summer sessions and intensive courses.

DROPPING OF STUDENTS FOR SCHOLASTIC DEFICIENCY

A student on scholastic probation shall be dropped from the University if at the close of any semester the semester or graduation index is less than that

required of a student with his classification as shown in Table B. This rule shall not apply for the semester in which the student completes all requirements for his degree. A student dropped by this rule and later duly re-admitted as a regular student shall be re-admitted on probation.

Applications for re-admission to the University from students who have been dropped for academic reasons must be accompanied by a check or money order, not cash, for \$50 made payable to Purdue University. Processing of the application will not begin until the fee is paid. Application may be obtained from the Student Affairs Office.

TABLE A. INDEX LEVELS FOR PROBATION

S = Semester Indexes; G = Graduation Index		
Classification	S	G
1	3.5	3.5
2	3.5	3.5
3	3.6	3.75
4	3.6	3.90
5	3.7	3.95
6	3.7	4.0
7	3.7	4.0
8 and up	3.7	4.0

TABLE B. INDEX LEVELS FOR DROPPING

S = Semester Index; G = Graduation Index		
Classification	S	G
1*	3.2	3.2
2	3.3	3.3
3	3.4	3.5
4	3.4	3.6
5	3.5	3.7
6	3.5	3.8
7	3.5	3.85
8 and up	3.5	3.9

DISTINGUISHED STUDENTS

Regular undergraduate students, carrying at least 14 semester hours, who successfully complete all their courses with a grade C or higher and obtain a semester scholarship index of 5.50 or better will be designated as distinguished for that semester.

DEGREES WITH DISTINCTION

Degrees are awarded at the end of each semester and summer session to candidates who have completed the requirements of their schools. At each of these periods, degrees with distinction are awarded to those completing the undergraduate plans of study under the following rules:

*Affects only students entering on probation.

1. Distinction at graduation shall be awarded on the basis of all course work taken. Baccalaureates with distinction shall be granted only to those who complete the four (or five) year curricula at Purdue and not to those who complete only the first three years at Purdue.
2. A candidate for the baccalaureate with distinction must have earned at least 70 hours of credit at Purdue. A candidate for an associate degree with distinction must have earned at least 45 hours of credit at Purdue. For any student to qualify for distinction, his scholarship index for all work completed must be at least 5.00.
3. If the number of graduates in any school who qualify for distinction under rules (1) and (2) exceeds one-tenth of the total number of graduates from that school and for that semester or summer session, the number of degrees with distinction shall be limited to one-tenth of the class in that school, and those graduates with the highest indexes shall be included. In administering this rule all baccalaureate engineering graduates will be considered as one school and all associate degree graduates will be considered as one school.
4. Of those students who qualify for distinction under these rules, the three-tenths of the baccalaureate graduates having the highest indexes shall be designated as graduating with highest distinction, irrespective of the schools to which they may belong. The three-tenths of the associate degree graduates having the highest indexes will be designated as graduating with highest distinction.
5. No student with a record of faculty discipline shall be included without special approval by the faculty.

Plans of Study

ABBREVIATIONS

THE FOLLOWING ABBREVIATIONS of subject fields are used in the Plans of Study and Descriptions of Courses sections of this catalog:

A&AE—Aeronautics and Astronautics	CE—Civil Engineering	ED—Education
A&D—Art and Design	CET—Civil Engineering Technology	EE—Electrical Engineering
AGEN—Agricultural Engineering	CHE—Chemical Engineering	EET—Electrical Engineering Technology
AGEC—Agricultural Economics	CHM—Chemistry	EG—Engineering Graphics
AGR—Agriculture	CHT—Chemical Technology	ENGL—English
AGRY—Agronomy	CS—Computer Sciences	ENGR—Engineering
ANSC—Animal Sciences	C&T—Clothing and Textiles	ESC—Engineering Sciences
ANTH—Anthropology	COM—Communication	F&N—Foods and Nutrition
ART—Architectural Technology	CPT—Computer Technology	
BCHM—Biochemistry	ECON—Economics	
BIOL—Biological Sciences		

FOR—Forestry and Conservation	IE—Industrial Engineering	NT—Nursing Technology
FR—French	IET—Industrial Engineering Technology	PCOL—Pharmacology
GEOS—Geosciences	IT—Industrial Technology	PEM—Physical Educa- tion for Men
GER—German	M—Management	PEW—Physical Educa- tion for Women
GNC } Community	LS—Land Surveying	PHAR—Pharmacy
GBA } College	MA—Mathematics	PHIL—Philosophy
GSA }	ME—Mechanical Engineering	PHYS—Physics
GNT—General Studies Technology	MSE—Materials Engineering	POL—Political Science
GS—General Studies, Humanities	MET—Mechanical Engineering Technology	PSY—Psychology
HIST—History	MUS—Music	RUSS—Russian
HORT—Horticulture		SOC—Sociology
IAT—Industrial Arts Teaching		SPAN—Spanish
IDE—Interdisciplinary Engineering		SPV—Supervision
		STAT—Statistics

School of Agriculture

THE SCHOOL OF AGRICULTURE offers over 30 plans of study leading to the degree of Bachelor of Science and Bachelor of Science in Forestry. Upon admission to the School of Agriculture, the student must meet with the academic advisor to develop a sequence of courses leading to a clearly defined program. Undergraduate plans of study are offered in the following areas:

Agricultural Mechanization—technical and academic preparation for careers in sales, service, and applications of the mechanized phases of agriculture and related businesses.

Agricultural Meteorology—emphasizes statistical and microclimatology to prepare students for careers in agricultural and forestry meteorology and graduate studies in the environment sciences.

Agricultural Science—broad training in basic agricultural sciences. The curriculum is designed primarily for those who plan graduate studies in the life sciences.

Agronomy—specialization in plant genetics, crop production, and soil problems.

Animal Sciences—livestock breeding, animal nutrition, and management problems. Preparation for commercial fields allied to meat, poultry, and dairy products.

Biochemistry—preparation for careers with food, fertilizer, and pharmaceutical industries related to the life sciences. Provides background for graduate work in biochemistry and plant and animal sciences.

Community Development—provides training to qualify the student to work with local communities, agencies, organizations, or groups involved in solving community problems; is interdisciplinary, integrating sociological-humanistic courses with agriculture.

Entomology—training for careers in government and industry in sales, research, insect control, and insecticide regulation.

- Food Business Management**—is designed for the student with a primary interest in management and/or marketing positions in the nation's food processing and distribution firms.
- Food Engineering**—professional training in agricultural engineering and food science for careers in food production, processing, packaging, transportation, and equipment manufacturing industries.
- Food Science**—training to qualify for positions in the food industry. Strong science background emphasized in the curriculum.
- Forest Management**—broad training in fundamental concepts of professional forestry needed for enlightened management of nonagricultural lands.
- Forest Products Industry**—broad training in the manufacture and use of wood and fiber products to prepare graduates for jobs in timber resource harvesting, timber utilization, wood products manufacture, and sales.
- Forest Recreation**—prepares students to be forest land managers who are especially trained to provide diverse recreational opportunities for human enjoyment.
- General Agriculture**—provides a wide choice of agricultural and other subjects as a background for individual objectives or a general agricultural education.
- Horticulture**—academic and technical training for careers in horticulture, food processing, and allied industries.
- International Agriculture**—students in any option may work with the International Advisory Committee and carry appropriate electives. Foreign experience is a possibility.
- Landscape Architecture**—training in design and planning for residential, industrial, and community landscaping.
- Management: Business and Farm**—training for managerial careers in agriculture-related industries.
- Natural Resources and Environmental Science**—a curriculum which faces the problems of environmental quality as it relates to human welfare; provides flexibility to develop individual study that will prepare the student to contribute to the solution of environmental problems.
- Plant Protection**—provides a comprehensive, organized treatment of the principles of plant protection and their application, including the proper use of modern pesticides; prepares students for careers in agricultural chemical companies, agribusinesses, and federal and state regulatory agencies.
- Preveterinary Medicine**—a two-year program designed to meet requirements for admission to the Purdue School of Veterinary Science and Medicine.
- Soil and Crop Science**—preparation for technical phases of agronomy and for graduate studies in soils and plant genetics and nutrition leading to careers with government and industry.
- Turf**—training in plant and soil science and chemistry leading to careers with public and private golf courses, parks, and recreational areas.
- Urban Forestry**—trains students to work with the unique ecological and social problems of managing trees in urban environments.
- Urban and Industrial Pest Control**—specialization in controlling pests in homes and commercial facilities, for careers with industries, government agencies, and private businesses.

Wildlife Management—prepares students to be land managers especially trained to protect and improve wildlife resources for their aesthetic, recreational, ecological, or commercial values.

Wildlife Science—prepares students for research, educational or interdisciplinary work in wildlife biology and fisheries, particularly when followed by graduate study.

For a discussion of the various options, refer to the bulletin of the School of Agriculture. The first two years of most programs are offered at the North Central Campus.

REQUIRED FRESHMAN YEAR*

First Semester	Second Semester
(4) BIOL 108 (Biology of Plants)	(4) BIOL 109 (Biology of Animals)
(3) CHM 111 (General Chemistry)	(3) CHM 112 (General Chemistry)
(3) ENGL 104 (English Composition I)	(3) ENGL 105 (English Composition II)
(3) MA 153 (Algebra and Trigonometry I)	(3) MA 154 (Algebra and Trigonometry II)
(1) AGR 101 (Agricultural Lectures)	(3) Agriculture elective
(3) Agriculture elective	_____
_____	(16)
(17)	

FRESHMAN AGRICULTURE ELECTIVES

Each student will select from the following group two subjects to be taken in his freshman year. His selections will provide the basis for his choice of optional groups in the sophomore, junior, and senior years. He should discuss his electives with the agricultural advisers at registration.

- (3) AGRY 105 (Crop Production)
- (3) ANSC 101 (Animal Agriculture)
- (3) AGECE 100 (Introductory Agricultural Business and Economics)
- (3) HORT 102 (Fundamentals of Horticulture)

Community College

THE COMMUNITY COLLEGE is an arm of the Purdue North Central Campus designed to provide flexibility of service to prospective students, employers, and the public of north central Indiana. One of its purposes is to provide post-high-school educational opportunities for those not in a position to meet the entrance

*There are slight variations in the academic program for students following programs in agricultural science, biochemistry, food technology, preveterinary, wood utilization, forest production, conservation, and wildlife.

requirements of one of the other schools of the University. Students who have a desire to enter one of the other schools can prepare themselves through the Bridge Program of the Community College.

In addition, the Community College provides a place where students not yet committed to a specific program of study can explore, experiment, and mature in their thinking regarding future educational objectives.

The Community College can also serve students who plan to complete their education at other institutions of higher education, but wish to make a start toward their educational goals while living at home and attending Purdue North Central.

Exercising its flexibility, the Community College will design courses, programs, and curricula to meet immediate and future specific community needs. In cooperation with governmental and private agencies, current "ladder" educational opportunities can, and are, being made available. The secretarial arts and general business programs are examples.

BRIDGE PROGRAM

The Community College Bridge Program is designed to serve as a bridge from the student's present academic level to a level which will allow him or her to pursue present Purdue curricula and/or programs at other institutions. It is designed for veterans and other adults who wish to return to college as well as recent high school graduates who need additional skills. The program concentrates on basic skills in three areas, namely:

- 1. Study skills
- 2. Communication skills
- 3. Mathematical skills

Also available is a course that aids the student in understanding himself, his strengths and weaknesses, and helps him to determine goals best suited to his interests, abilities, and values.

Some students require the complete program while others require only portions of it. They take regular credit courses and those Community College Bridge Program courses in areas where they need special help.

BASIC CURRICULUM

First Semester	Second Semester
GNC 160 (Arithmetic and Foundations of Algebra)	ENGL 100 (English Composition)
GNC 100 (Study Skills)	ENGL 285-6 (Developmental Reading and Vocabulary Building)
GNT 130 (General Communications Skills)	GNC 260 (Algebra and Fundamentals of Plane Geometry)
GNC 101 (Testing, Self-Analysis and Counseling)	COM 114 (Fundamentals of Speech Communication)
	Selected courses in major

GENERAL BUSINESS

The primary thrust of the associate degree in general business program is to provide students with entry level skills in a variety of business activities at the completion of two years of full-time study. This program is designed to prepare students for employment in the areas of sales, distribution, marketing, accounting, or office supervision. It features a strong core of general business courses with options provided so that the students who are interested in specialized areas can pursue their goals. For example, a student who is interested in accounting will take courses required for a general understanding of business plus specialized courses in accounting under the accounting option in this program. The student is allowed to take twenty-five percent of the degree requirements as electives so that interests in other fields may be pursued. This design allows maximum flexibility for the student. It also provides a broad sampling of courses in general business making it ideal for those students who have not decided on a specialty and want to explore this area as a career.

Students who earn the associate degree in business may continue their work toward a baccalaureate degree by transferring to the supervision program in the School of Technology at Purdue North Central.

ASSOCIATE DEGREE IN GENERAL BUSINESS

Required Courses		Option in Accounting	
(3)	GNC 127 (Introduction to Business)	(3)	GNC 227 (Principles of Accounting I)
(3)	GNC 161 (Business Math I)	(3)	GNC 228 (Principles of Accounting II)
(3)	GNC 261 (Business Math II)	(3)	GNC 327 (Cost Accounting)
(3)	GNC 131 (Business Communications I)	(3)	GNC 427 (Financial Accounting)
(3)	GNC 231 (Business Communications II)	(3)	GNC 128 (Principles of Tax Preparation)
(3)	GNC 126 (Personal Finance)		
(3)	SPV 374 (Principles of Supervision)		
(3)	GNC 420 (Business Law)		
(3)	GNC 421 (Data Processing in Business)	(15)	
(3)	GNC 230 (Oral Communications for Business Personnel)		
(30)			
Option in Marketing		Option in General Business	
(3)	GNC 329 (Principles of Marketing)	(3)	GNC 329 (Principles of Marketing)
(3)	GNC 428 (Principles of Retailing)	(3)	SPV 276 (Personnel Administration)
(3)	GNC 428 (Retailing Seminar)	(3)	SPV 252 (Human Relations in Business)
(3)	SPV 252 (Human Relations in Business)	(3)	ECON 210 (Principles of Economics)
(3)	ECON 210 (Principles of Economics)	(3)	GNC 224 (Administrative Office Procedures)
(15)		(15)	

Electives

- 1. Any courses in Group II above, not required by student's option.
- 2. Any courses from general University offerings commensurate with student's abilities and interests selected after consultation with his/her academic advisor.

SECRETARIAL ARTS

The program is envisioned as a "career ladder" whereby students can leave at the end of one year with a certificate and marketable skills. If a student continues for the second year of the program, she can earn an Associate of Arts degree in secretarial arts.

The two-semester certificate program consists of 33 semester hours of credit and is highly structured. If a student must start with the beginning courses, there are no electives. If, however, the student already has the basic skills, he/she may elect suitable electives or proceed to the second year of the program upon consultation with the adviser.

For students continuing into associate degree program, the third semester is fairly well structured but will be tailored to the individual's needs. The fourth semester has only two required courses and allows for nine semester hours of electives. These electives will be selected to meet the interests of the student.

A daytime curriculum for full-time students and an evening curriculum for part-time students are available.

FRESHMAN YEAR

First Semester	Second Semester
(2) GNC 120 (Seminar on Office Practice)	(3) GNC 221 (Typing II: Advanced)
(3) GNC 121 (Typing I: Basic)	(3) GNC 222 (Stenography II: Intermediate)
(3) GNC 122 (Stenography I: Basic)	(3) GNC 231 (Written Communication for Secretaries II)
(2) GNC 123 (Filing Systems)	(3) GNC 230 (Oral Communications for Business Personnel)
(3) GNC 131 (Written Communication for Secretaries I)	(3) GNC 124 (Accounting for Secretaries)
(3) GNC 161 (Mathematics of Personal and Business Finances)	(2) GNC 223 (Use of Office Machines)
_____ (16)	_____ (17)

SOPHOMORE YEAR

Third Semester	Fourth Semester
(3) GNC 322 (Stenography III: Advanced)	(3) GNC 422 (Specialized Dictation and Transcription)
(3) IET 104 (Industrial Organization)	(3) HIST 367 (Twentieth-Century American History)
(3) SPV 268 (Elements of Law)	or
(3) SOC 100 (Introductory Sociology)	(3) POL 101 (American Government and Politics)
(3) ECON 210 (Principles of Economics)	(9) Electives
_____ (15)	_____ (15)

ADDITIONAL ELECTIVES

CPT 100, 200, 300

ECON 211, 222

ENGL level 200 courses

HIST 203, 204, 251, 252

INDM 302

POL 101, 141

PSY 120

SOC 220

SPV 240, 252

Schools of Engineering

UNDERGRADUATE INSTRUCTION in aeronautical engineering, agricultural engineering, chemical engineering, civil engineering, electrical engineering, engineering sciences, industrial engineering, mechanical engineering, materials science, metallurgical engineering, and the Division of Interdisciplinary Engineering Studies leads to the degree of Bachelor of Science.* In order to give the student sufficient time to adjust himself and to choose the branch of engineering for which he is best adapted, the following program of study during the freshman year is common for all engineering curricula. Only those students with adequate background training will be expected to accomplish this in two semesters. Students with inadequate preparation, particularly in mathematics and chemistry, may require an additional semester or summer session to attain sophomore standing.

COOPERATIVE PROGRAMS WITH INDUSTRY

Five-year cooperative education programs are available in all of the engineering disciplines. Students participating in these programs alternate periods of attendance at the University with periods of engineering experience in selected industries, government agencies, and consulting engineering firms.

While completing the requirements for an engineering degree, students gain a realistic concept of the challenge, working conditions, and rewards of being a member of the engineering profession.

Students planning a graduate program gain experiences with instrumentation and experimental techniques that are a valuable asset for later thesis work. Students often earn nearly all of their educational expenses while working for their cooperative employer.

Upon completion of the program, the students receive the regular Bachelor of Science degree and a certificate indicating their completion of the cooperative education program.

*Students who wish to become nuclear engineers are encouraged to enroll in the Division of Interdisciplinary Engineering Studies at the undergraduate level. The Department of Nuclear Engineering enrolls only graduate students, but some of the courses offered in nuclear engineering are available to undergraduate students.

The degree of Bachelor of Science in Engineering may be awarded to a student who acceptably carries out an interdisciplinary program which cuts across several of the traditional 'school' lines. These programs are administered by the Division of Interdisciplinary Engineering Studies.

The School of Materials Engineering also offers special programs in materials science and engineering.

FRESHMAN ENGINEERING

The Department of Freshman Engineering administers the program of study which leads to admission into one of the Schools of Engineering. The freshman program of study in which the individual student is placed is determined by the College Entrance Examination Board tests and school record data.

The freshman engineering program of study can be completed in one year. There are alternate programs of study available—some for the very well prepared, some for those less well prepared. Certain students have essentially completed their freshman requirements by their high school work, while others may require more than two semesters to prepare themselves for the professional engineering schools. Each beginning engineering student is advised individually by an engineering faculty counselor to insure that the student is properly placed in a program so that the student has a high probability of success. Prospective beginning engineering students are encouraged to visit the engineering faculty adviser at Purdue North Central as early as practicable in his junior or senior year in high school.

Typical Freshman Program

(For those students fully qualified upon entrance)

FRESHMAN YEAR

First Semester	Second Semester
(5) MA 163 (Plane Analytic Geometry & Calculus I)	(5) MA 164 (Plane Analytic Geometry & Calculus II)
(4) CHM 115 (General Chemistry I)	(4) CHM 116 (General Chemistry II)
(3) ENGL 104 (English Composition I)	(3) ME 270 (Basic Mechanics I (Statics))
(3) COM 114 (Fundamentals of Speech Communication)	(3) CS 220 (Computer Science)
(2) EG 116 (Engineering Graphics I)	(3) General Education Elective*
<hr/> (17)	<hr/> (18)

SOPHOMORE YEAR ENGINEERING PROGRAM

Since many of the engineering schools require the same 'core' courses in their undergraduate instruction, it is possible for those students who select the schools of Aeronautical, Civil, Industrial, or Mechanical Engineering as well as the Division of Interdisciplinary Engineering Studies to complete their sophomore year at Purdue North Central Campus.

SOPHOMORE YEAR CURRICULUM

Third Semester	Fourth Semester
(4) MA 261 (Multivariate Calculus)	(4) MA 262 (Linear Algebra & Differential Equations)
(4) PHYS 152 (Mechanics and Sound)	(5) PHYS 251 (Heat, Electricity, Optics)
(3) ME 274 (Basic Mechanics II Dynamics)	(3) CE 273 (Mechanics of Materials)
(6) General Education Electives*	(6) General Education Electives*
<hr/> (17)	<hr/> (18)

*All engineering students are required to take a minimum of 15 credit hours of general education courses in social sciences, fine arts, and humanities.

School of Consumer and Family Sciences

(Formerly the School of Home Economics)

The School of Home Economics of Purdue University has been reorganized and renamed the School of Consumer and Family Sciences. The plan of study is designed to prepare men and women for professional work in the various areas of the field and at the same time to provide a broad general education.

There are four Departments in the School of Consumer and Family Sciences: Consumer Science and Retailing; Child Development and Family Living; Restaurant, Hotel, and Institutional Management; and Foods and Nutrition.

DEPARTMENT OF CONSUMER SCIENCE AND RETAILING

Major: Social Welfare-Community Service

Major: Environmental Design

Option: Residential and Interior Design

Option: Apparel Technology

Major: Consumer Product Analysis

Option: Clothing

Option: Textiles

Option: Housing

Option: Equipment

Major: Consumer Economics and Public Policy

DEPARTMENT OF CHILD DEVELOPMENT AND FAMILY LIVING

Major: Nursery-Kindergarten Teaching

Major: Child Development

Major: Family Studies

DEPARTMENT OF RESTAURANT, HOTEL, AND INSTITUTIONAL MANAGEMENT

Major: Restaurant, Lodging Management

Major: Institutional Management

DEPARTMENT OF FOODS AND NUTRITION

Major: Dietetics

Major: Foods in Business

Major: Foods Service

Interdisciplinary majors are also offered in the School of Consumer and Family Sciences.

Students interested in preparation for work in the fields mentioned should enroll in the curriculum which follows.

FRESHMAN YEAR

First Semester

- (3) ENGL 104 (English Composition I)
- (3) CHM 111 (General Chemistry)
- (3) PSY 120 (Elementary Psychology)
- (3) MA 123 (Elementary Concepts of Mathematics I)
- (3) History or political science elective

(15)

Second Semester

- (3) ENGL 105 (English Composition II)
- (3) CHM 112 (General Chemistry)
- (3) SOC 100 (Introductory Sociology)
- (3) COM 114 (Fundamentals of Speech Communication)
- (3) Elective

(15)

SOPHOMORE YEAR

Third Semester	Fourth Semester
(3) BIOL 203 (Biology of Man)	(3) BIOL 204 (Biology of Man)
(3) ECON 210 (Principles of Economics I)	(3) F&N 303 (Essentials of Nutrition)
(3) A&D 355 (Art Appreciation)	(3) PSY 235 (Child Psychology)
(3) Literature Elective	(6-9)Electives
(3-6)Electives	
<hr/>	<hr/>
(15-18)	(15-18)

**School of Humanities,
Social Science, and Education**

REQUIREMENTS FOR GRADUATION

THE REQUIREMENTS FOR the baccalaureate degree are listed in the *General Information* bulletin of the University. One of these requirements is the certification by the dean of the appropriate school that the student has completed his plan of study.

Attainment of the objectives of the School of Humanities, Social Science, and Education is sought in two ways. One is through the specialized knowledge a student acquires as he majors or minors in one or more of the subjects offered by the departments in the school. The other is through the opportunity to gain skill and knowledge in other areas of learning through a combination of requirements and free electives.

DEGREES OFFERED

Three bachelor's degrees are offered in the School of Humanities, Social Science, and Education: Bachelor of Arts, Bachelor of Science, and the Bachelor of Physical Education.

The program leading to the degree of Bachelor of Arts is followed by students majoring in any of the fields of the humanities or the social sciences, in physical education for women, or in high school teaching in any of these fields. The program leading to the degree of Bachelor of Science is followed by students majoring in audiology and speech sciences and those majoring in psychological sciences. The program leading to the degree of Bachelor of Physical Education is followed by students preparing for coaching and teaching, for admission to a school of physical therapy, or for athletic training.

BACHELOR OF ARTS OR BACHELOR OF SCIENCE

The plan of study for the Bachelor of Arts and the Bachelor of Science degrees in the School of Humanities, Social Science, and Education consists of (1) the general education requirements, (2) the requirements for the major (or "area"

or “concentration”), and (3) a sufficient number of elective courses to bring the total credits to 120. All credits must have been earned within the ten years preceding the date of graduation.

GENERAL EDUCATION REQUIREMENTS

The general education requirements specify a minimum involvement in several areas. They have been established in order to insure that each student has the opportunity to acquire skill in the oral and written use of his own language, in at least one other modern language, and in mathematics, and that he has had a significant experience in the field of science, in the arts, in the humanities, and in the social sciences.

Areas	Hours
English Composition (ENGL 104-105)	6
Interpersonal Communication (Speech) (COM 114)	0 or 3
Foreign Language (Three semesters: 101, 102 and 203)	9
Mathematics or Logic	5 or 6
Humanities	12

Twelve hours, not more than six hours in one *area*, not more than six hours in one department.

The *areas* are *aesthetics*, *history*, *literature*, and *philosophy*. The approved courses in those *areas* are *aesthetics*: A&D 104, 355, 356, 357, 358, 359, 381, 382, 383, 390, 450, 451, 452, 458; MUS 250, 371, 372, 373, 374, 375; ENGL 376, 405; THTR 201; PEW 112S, 113F, 113M, 113N, 113S, 115G, 115M, 115N, 115R, 140, 141; COM 240, 340, 341, 342. *History*: HIST 102, 103, 104, 151, 152, any other. *Literature*: ENGL 230, 231, 235, 237, 238, 240, 241, 250, 266, 267, 350, 351, 381, 382, 442, 462, 463, 464, 479; ML any foreign language literature course; COM 312, 513, 514, 517, 519. *Philosophy*: Any course except logic (observe prerequisites).

Social Sciences	6
Any two courses, chosen from: ECON 210 or 219, 211; MGMT 200, 430, 431, 445, 455; POL 101, 141, 230, 300, 301, 321, 350, any course in POL; PSY 120, any course in PSY (observe prerequisites); SOC 100 or 312; ANTH 105, 304; any course in SOC or in ANTH (observe prerequisites).	
Natural Sciences	6
A six-hour set of courses in biology, chemistry, geosciences, or physics.	

Total of core requirements	38 to 43 hours
Minimum required for graduation	120 hours

CONCENTRATION REQUIREMENTS

There are three patterns of concentration: (1) the *area* (maximum of 45 hours, of which at least 12 are in courses outside the major department), (2) the

concentration (36 to 45 hours); and (3) the *major* (24 to 35 hours). Each department specifies whether its major must be accompanied by a minor. This major, concentration, or area provides the depth necessary for admission to a graduate school, to meet teacher certification requirements, or for a well-rounded liberal education.

Each student must file his choice of major, area, or concentration at the office of the dean, not later than the end of the third semester. He may subsequently change his major, with permission of the dean.

B.A. and B.S. Degrees
AREAS, CONCENTRATIONS, AND MAJORS

Audiology and Speech Sciences	German
Audiology and Speech Sciences	Russian
Speech and Hearing Therapy	Spanish
Black Studies	History
Communication	American History
Journalism	European History
Specialty Journalism	Nonwestern History
Interpersonal and Public Communication	World History
Organizational Communication	Media Sciences
Radio-Television-Film	Philosophy
Creative Arts	Philosophy
Art History	Religious Studies
Fine Arts	Physical Education, Health, and Recreation
Industrial Design	Community Health
Interior Design	Physical Education
Visual Design	Recreation
(Advertising Design)	Political Science
Theatre (Acting, Design, Directing)	Psychology
English	Science and Culture
Foreign Language	Sociology
French	Anthropology
	Sociology

MINORS

Anthropology	Philosophy
Audiology and Speech Sciences	Physical Education
Black Studies	Political Science
Economics	Psychology
English	Radio and Television
French	Recreation
German	Russian
History	Sociology
Journalism	Spanish
Mathematics	Interpersonal and Public Communication
Media Sciences	Theatre
Music History and Theory	

PROGRAMS FOR TEACHER CERTIFICATION

Teaching Area Majors

Arts and Crafts

Physical Education and Health

Teaching Majors

Arts and Crafts

Health and Safety

Elementary Education

Journalism

Foreign Language

Physical Education and Health

Junior High School

School Library and Audiovisual

Library

Services

Nursery-Kindergarten

Social Studies—two of:

Physical Education

Economics

Speech and Hearing Therapy

Government

English

Sociology

Foreign Language

U.S. History

French

World History

German

Speech

Russian

Speech and Hearing Therapy

Spanish

Teaching Minors

Arts and Crafts

Physical Education (Men)

Biology

Physical Education (Women)

Chemistry

Physics

English

Psychology

Foreign Language

Recreation

French

Social Studies—one of:

German

Economics

Russian

Government

Spanish

Sociology

General Science

U.S. History

Health and Safety

World History

Journalism

Speech

Mathematics

In teacher preparation, Purdue University has been accredited by the National Commission on Accreditation of Teacher Education, by the North Central Association of Secondary Schools and Colleges, and by the Indiana State Department of Public Instruction. Detailed requirements for any of the areas, majors, or minors may be obtained from the student counseling office of the school. A student who has an educational objective not covered in the list of areas, majors, or minors should consult Dean Earl B. Notestine in the Humanities, Social Science, and Education Counseling Office.

ELEMENTARY EDUCATION

Preparation in elementary education is offered to a limited number of students chosen on the basis of above-average scholarship, leadership qualities, good mental and physical health, and positive attitude toward children and

teaching as a profession. In addition to the core program of all students and the professional program in elementary education, the student will have 24 semester hours for a major in the field of his choice or a program of directed electives.

BACHELOR OF PHYSICAL EDUCATION

The plan of study for the degree Bachelor of Physical Education consists of:

1. Completion of specific course requirements in the selected curriculum within the two general options, A and B.
2. Completion of at least ten semester hours, with required graduation index, within the ten years preceding the date of graduation.

During the freshman year, a program common to all possible choices, the student selects his option under guidance of his assigned counselor.

Option A—Teaching Option. Within the option, a student may elect coaching with any of a dozen teaching minors, preoccupational therapy, prephysical therapy, athletic training, special education, or any of several other related areas.

Option B—Nonteaching Option. Within this option, a student may elect a second area of specialty according to his interests and needs. Among the possible second areas are sales, sportscasting, sportswriting, social work, and prephysical therapy.

School of Management

MANAGEMENT

AS MODERN SOCIETY makes increasing use of technology, managers must keep informed to handle their own jobs effectively and to be able to understand and cooperate with the technical specialist. The management curriculum, by including a required technical sequence, enables the student to take advantage of Purdue's excellent resources in science and technology. Through the technical option, students are provided an opportunity to acquire a basic understanding of a specific area in the field of science and technology. Such an objective is essential if the individual is to be capable of working effectively with engineers and scientists in a technically-based industry.

Included in the curriculum is a concentration of mathematics and quantitative methods courses designed to provide the necessary training and background in the use of rigorous analytic techniques applicable to management decisions. This program is designed to help the student develop this kind of broad understanding of the management process.

An administrator cannot be made in the short span of a few months or year. Indeed, most individuals require years of experience to develop the skills, insights, and maturity of judgment which distinguish an effective manager. However, a professional management curriculum can give the student an effective start in his development as a manager. In brief, it can help him become a more useful member of his organization early in his career, and it can aid him in learning and growing more rapidly in positions of increasing responsibility.

Industrial Management

FRESHMAN YEAR

First Semester	Second Semester
(4) Chemistry or physics	(4) Chemistry or physics
(3) COM 114 (Fundamentals of Speech Communication)	(3) ECON 210 (Principles of Economics)
(3) ENGL 104 (English Composition I)	(3) ENGL 105 (English Composition II)
(5) MA 163 Integrated Calculus & Analytic Geometry I	(3) General education group 1 elective*
<hr/>	(5) MA 164 (Integrated Calculus & Analytic Geometry II)
(15)	<hr/>
	(18)

SOPHOMORE YEAR

Third Semester	Fourth Semester
(3) CS 220 (Introduction to Algorithmic Processes)	(3) ECON 252 (Macrofinance)
(3) ECON 251 (Microeconomics)	(3) General education group 2 elective*
(3) General education group 1 elective*	(3) MGMT 201 (Cost Accounting)
(3) MGMT 200 (Introductory Accounting)	(3) Technical option 1†
(4) MA 261 (Multivariate Calculus)	(3) Technical English Composition
<hr/>	<hr/>
(16)	(15)

General Management

FRESHMAN YEAR

First Semester	Second Semester
(3) COM 114 (Fundamentals of Speech Communication)	(3) ECON 210 (Principles of Economics)
(3) ENGL 104 (English Composition I)	(3) ENGL 105 (English Composition II)
(3) General education group 1 elective*	(3) General education group 1 elective*
(3) Lab science I elective†	(3) Lab science II elective†
(3) MA 153 (Algebra and Trigonometry I)	(3) Business Calculus
<hr/>	<hr/>
(15)	(15)

* General education requirements consist of: group 1 one two-course sequence; group 2 one course in each of two other areas. The areas for selection are English literature, history, philosophy, political science, psychology, and sociology.
† For the technical option, a minimum of 15 hours is necessary. Technical option areas are: computer sciences, economics, engineering, quantitative methods or science (biology, chemistry, geology, mathematics, physics).

SOPHOMORE YEAR

Third Semester	Fourth Semester
(3) CS 220 (Introduction to Algorithmic Processes)	(3) ECON 252 (Macrofinance)
(3) ECON 251 (Microeconomics)	(3) General education group 1 elective*
(3) General education group 1 elective*	(3) MGMT 201 (Cost Accounting)
(3) MGMT 200 (Introductory Accounting)	(3) MA 214 (Finite Mathematics II)
(3) MA 213 (Finite Mathematics I)	(1-2) Elective
(1-2) Elective	
(16-17)	(13-14)

ECONOMICS

In contrast to the technically-based internal approach utilized in the management program, the economics curriculum provides a coordinated series of courses in the field of economics and business as a means of developing a broad fundamental background in business organizations and the economic environment in which a business operates. The program includes four two-semester sequences covering economic principles, aggregate economics, statistics, and accounting, plus courses in business law and managerial economics. In addition, three related courses in economics and business of special interest to the student make possible a degree of specialization. Elective hours permit either further concentration in economics or enrichment in the general education area.

Business leaders, employment officials, and schools for advanced study, such as law schools, have endorsed this type of economics and business education with liberal arts background. The program satisfies the need of future junior business executives for a broad, liberal-arts-oriented base on which to build specific training and experience received on the job.

* General education requirements consist of: group 1 — one four-course sequence (not general studies, fine arts, or anthropology); group 2 — two two-course sequences (to include psychology unless selected above); and group 4 — one course in one other area. The areas for selection are American history, anthropology, English literature, fine arts, general studies, modern language, philosophy, political science, psychology, sociology, world history, world literature.

Economics

FRESHMAN YEAR

First Semester	Second Semester
(3) COM 114 (Fundamentals of Speech Communication)	(3) ECON 210 (Principles of Economics)
(3) ENGL 104 (English Composition I)	(3) ENGL 105 (English Composition II)
(3) General education group 1 elective*	(3) General education group 1 elective*
(3) Lab science II elective†	(5) MA 164 (Plane Analytic Geometry and Calculus II) or
(5) MA 163 (Plane Analytic Geometry and Calculus I) or	(3) MA 214 (Finite Mathematics II)
(3) MA 213 (Finite Mathematics I) or	(0-3) Elective
(5) MA 151 (Algebra and Trigonometry)‡	
(0-3) Elective	
<hr/> (15-20)	<hr/> (15-20)

SOPHOMORE YEAR

Third Semester	Fourth Semester
(3) CS 220 (Laboratory on Algorithmic Processes)	(3) ECON 252 (Macroeconomics)
(3) ECON 251 (Microeconomics)	(3) MA 214 (Finite Mathematics II) or
(3) MGMT 200 (Introductory Accounting)	MA 224 (Introductory Analysis II)
(3) MA 213 (Finite Mathematics I) or	(3) General education group 1 elective*
MA 223 (Introductory Analysis I)	(3) General education group 2 elective*
(1-2) Electives	(3) Technical English Composition
<hr/> (16-17)	<hr/> (15)

* General education requirements consist of: group 1 one four-course sequence (not general studies, fine arts, or anthropology); group 2 two two-course sequences (to include psychology unless selected above). The areas for selection are American history, anthropology, English literature, fine arts, general studies, modern languages, philosophy, political science, psychology, sociology, world history, world literature.

† Completion of any two semesters (six hours minimum) in the following subject: biology, chemistry, geosciences, or physics.

‡ MA 151 is acceptable toward the degree requirements.

School of Science

THE SCHOOL OF SCIENCE consists of the departments of Biological Sciences, Chemistry, Physics, Computer Sciences, Statistics, Geosciences, and the Division of Mathematical Sciences.

The School of Science offers a broad training which prepares students for a variety of careers.

Curricula leading to two degrees, Bachelor of Science and Bachelor of Science in Chemistry, are offered by the School of Science.

Specific details of these curricula and the requirements for the degrees are listed in the School of Science catalog.

BACHELOR OF SCIENCE DEGREE

General Education Requirements

The following general requirements for the B.S. degree in the School of Science are supplemented by requirements of the department of the student's major. Particular attention is drawn to modification allowed in the curricula for prospective high school teachers (as indicated below).

1. A total of 124 semester hours: An average of 15½ hours per semester is sufficient to accumulate 124 hours in eight semesters. Students with a graduation index less than 5.0 are advised not to take more than 17 hours in any one semester.
2. English composition: One year of English composition, or ENGL 104 entered by achievement examination and completed with a grade of C or better.
3. Modern foreign language: Pass a fourth-semester college-level course in a modern foreign language, or pass an equivalent proficiency examination. In high school teaching curricula, the student must pass a second-semester college-level course in a modern foreign language or pass a proficiency examination.
4. Humanities, social science, and behavioral sciences: The minimum requirement is 18 hours, but it is strongly recommended that the student take more than a minimal program. Six hours must be chosen from each of two of the following areas: (a) literature, philosophy; (b) history, political science; and (c) economics, sociology, psychology. In addition, a satisfactory two-course sequence must be chosen from one of the above areas.
5. Mathematics: At least 11 hours.
6. Science: Each student must take at least four courses in laboratory science (biology, chemistry, geology, physics) *outside his major area*. It is preferable that he take two-course sequences in each of two sciences; in no case shall he satisfy this requirement by courses drawn from more than two sciences.

BIOLOGICAL SCIENCES

The Department of Biological Sciences offers four programs leading to the Bachelor of Science degree. These are:

- 1. Biological Sciences Program.** This program is designed for students interested in any of the areas of basic biology. By choosing an appropriate plan of study within this program a student can specialize in botany, microbiology, zoology, or general biology (including biophysics), either with the B.S. as a terminal degree or in preparation for graduate work.
- 2. Premedical, Predental and Preveterinary Program.** The plans of study in this program differ from those in the preceding program only in requiring fewer credits in biology and in providing an opportunity for some students to fulfill their requirements for the B.S. by taking all required courses (99 to 103 credits, depending on chemistry and mathematics sequences selected) in six semesters and then completing the first year at an accredited medical, dental or veterinary school.
- 3. Medical Technology Program.** The plans of study in this program include six semesters of work (96 credit hours) at Purdue University followed by a full year of work at an approved school of medical technology and a successful Board of Registry examination.
- 4. Biology Teaching Program.** The plans of study in this program are designed for prospective high school teachers in biology. Such students should note that, in addition to meeting the requirements for the degree, it is essential for them to complete the requirements for certification imposed by the state in which they expect to teach.

Each program consists of (1) the core courses in biology; (2) certain specified courses in chemistry, physics, and mathematics; (3) in some cases, additional elective courses in biology; (4) the School of Science course requirements; and (5) for prospective teachers, certain education courses. In the medical technology program, three of the core biology courses are replaced by other courses in biology, one of which must be animal physiology. The first two years of each program are offered at the North Central Campus.

**Biological Sciences, Premedicine, Predentistry, Preveterinary
Medical Technology, and Biological Teaching**

FRESHMAN YEAR	
First Semester	Second Semester
(3) BIOL 103 (Principles of Biology)	(3) BIOL 104 (Principles of Biology)
(4) CHM 115 (General Chemistry)	(4) CHM 116 (General Chemistry)
(3) ENGL 104 (English Composition I)	(3) ENGL 105 (English Composition II)
(3) MA 223 (Introductory Analysis I) or	(3) MA 224 (Introductory Analysis II) or
(5) MA 163 (Integrated Calculus and Analytic Geometry I)	(5) MA 164 (Integrated Calculus and Analytic Geometry II)
(3) Modern language	(3) Modern language
<hr/> (16-18)	<hr/> (16-18)

CHEMISTRY

Students electing chemistry as a major may select either of two degree programs, depending upon their interest. These are:

Bachelor of Science in Chemistry Degree

This degree program is designed primarily for students planning to go on to graduate study or preparing for an industrial career as a chemist. It is planned to fulfill the recommendations of the Committee on Professional Training of the American Chemical Society; graduates who follow this program will be certified to the American Chemical Society as having fulfilled recommended requirements.

Students wishing to graduate with the Bachelor of Science in Chemistry should plan to transfer to the West Lafayette Campus for their sophomore and subsequent years.

Bachelor of Science Degree (Chemistry major of chemistry teaching major)

This degree program contains the same basic courses in chemistry as the B.S. in Chemistry degree program but has fewer requirements and thus permits more electives from other areas. It is recommended that students build a program of study from another area to complement this basic but minimal chemistry program. It is particularly suited for students preparing for careers as chemistry teachers, geochemists, biologists, medical doctors, scientific librarians, science writers, chemical salesmen, chemical patent attorneys, or other careers which require a less highly specialized training in chemistry than is offered for the B.S. in Chemistry degree.

The chemistry, mathematics, and physics courses in this degree program meet the Indiana certification requirements for a secondary-school teaching major in chemistry.

FRESHMAN YEAR

First Semester

- (3) CHM 115 (General Chemistry)
- (5) MA 163 (Integrated Calculus and Analytic Geometry I)
- (3) ENGL 104 (English Composition I)
- (3) GER 101 (First Course in German)

(16)

Second Semester

- (5) CHM 116 (General Chemistry)
- (5) MA 164 (Integrated Calculus and Analytic Geometry II)
- (3) ENGL 105 (English Composition II)
- (3) GER 102 (Second Course in German)

(16)

SOPHOMORE YEAR

Third Semester

- (3) CHM 255 (Organic Chemistry)
- (2) CHM 255L (Organic Chemistry Laboratory)
- (4) MA 261 (Multivariate Calculus)
- (4) PHYS 152 (Mechanics)
- (3) GER 203 (Third Course in German)

(16)

Fourth Semester

- (3) CHM 256 (Organic Chemistry)
- (2) CHM 256L (Organic Chemistry Laboratory)
- (4) MA 262 (Linear Algebra and Differential Equations)
- (5) PHYS 251 (Heat, Electricity, and Optics)
- (3) GER 244 (Fourth Course in Scientific German)

(17)

MATHEMATICS

FRESHMAN YEAR

First Semester	Second Semester
(5) MA 163 (Integrated Calculus & Analytic Geometry I)	(5) MA 164 (Integrated Calculus & Analytic Geometry II)
(3) ENGL 104 (English Composition I)	(3) ENGL 105 (English Composition II)
(3) Modern language (German preferred)	(3) Modern language
(4) Science elective	(4) Science elective
(3) Elective	(3) Elective
<hr/>	<hr/>
(18)	(18)

SOPHOMORE YEAR

Third Semester	Fourth Semester
(4) MA 261 (Multivariate Calculus)	(3) MA 351 (Elementary Linear Algebra)
(3) Modern language	(3) Modern language
(4) Science elective	(4) Science elective
(6) Humanities electives	(3) MA 361 (Advanced Calculus and Differential Equations)
	(3) Elective
<hr/>	<hr/>
(17)	(16)

PHYSICS

FRESHMAN YEAR

First Semester	Second Semester
(3) ENGL 104 (English Composition I)	(4) CHM 116 (General Chemistry)
(4) CHM 115 (General Chemistry)	(5) MA 164 (Integrated Calculus & Analytic Geometry I)
(5) MA 163 (Integrated Calculus & Analytic Geometry I)	(4) PHYS 152 (Mechanics)
(3) Modern language	(3) Modern language
<hr/>	<hr/>
(15)	(16)

SOPHOMORE YEAR

Third Semester

- (4) MA 261 (Multivariate Calculus)
- (5) PHYS 251 (Heat, Electricity, and Optics)
- (3) ENGL 105 (English Composition II)
- (3) Modern language

(15)

Fourth Semester

- (4) MA 262 (Linear Algebra and Differential Equations)
- (3) PHYS 342 (Modern Physics)
- (3) Modern language
- (6) Electives

(16)

PREPHARMACY

Students wishing to prepare for the profession of pharmacy may complete one or two years on this campus registered in the School of Science. Application for transfer to the School of Pharmacy and Pharmacal Sciences (West Lafayette Campus) should be filed with the prepharmacy adviser *before February 14 of the final spring semester on this campus*. Students who, for any reason, do not transfer to the School of Pharmacy and Pharmacal Sciences may apply for transfer to any other school of the University or remain in the School of Science, with a change of educational objective.

ELECTIVES

Fifteen credit hours must be selected from two general areas of study: (1) humanities and (2) social studies and behavioral sciences. A minimum of six credit hours must be taken in each area. The 15 elective credit hours must be completed during the first six semesters. ECON 210 shall be counted toward the satisfaction of this requirement. Departments and courses which will meet the requirement for these restricted electives are the following:

Humanities

- Communication (all courses numbered 160 and above)
- Creative Arts (all courses)
- English (all courses numbered 200 and above)
- Modern Languages (all courses)
- Philosophy (all courses)

Social Studies and Behavioral Sciences

- Economics (all courses)
- History (all courses)
- Political Science (all courses)
- Sociology (all courses)

FRESHMAN YEAR

First Semester

- (3) MA 223 (Introductory Analysis I)
- (4) CHM 115 (General Chemistry)
- (3) Elective
- (3) ENGL 104 (English Composition I)
- (4) BIOL 108 (Biology of Plants)

(17)

Second Semester

- (3) MA 224 (Introductory Analysis II)
- (4) CHM 116 (General Chemistry)
- (3) ENGL 105 (English Composition II)
- (4) BIOL 109 (Biology of Animals)
- (3) Elective

(17)

School of Technology

THE APPLIED SCIENCES

THE UNIVERSITY has a number of two-year undergraduate programs leading to the degree of Associate in Applied Science.

The associate degree is awarded to each student who satisfactorily completes the program of study in one of the curricula. Graduates can expect to be immediately employable in industry. Those who have received the associate degree may be admitted to the two-year curricula designed to lead to a Bachelor of Science degree in technology, industrial education, or industrial supervision.

ASSOCIATE IN APPLIED SCIENCE DEGREE

Science and technology range from extremely simple to highly complex and abstract activities. At one extreme are the "professionals"; at the other, the mechanics, draftsmen, and service personnel. Within this broad spectrum, the educational backgrounds include doctor's degrees, master's degrees, bachelor's degrees, and associate's degrees at the University level, as well as certificates and diplomas from other post-high school educational and training institutions.

Frequently, the degree level is indicative of the job level. For example, in the medical profession, job titles include physicians (doctor's degree), medical technologists (bachelor's degree), and nurses (associate degree) at the University level as well as the practical nurse, hospital technician, and operating room technician (diploma) offered at other post-high-school educational institutions.

The Associate in Applied Science degree offered by Purdue's School of Technology is awarded after two years of University-level study in an applied scientific field. Graduates of such programs are called technicians.

A technician is an employee whose job requires applied technical knowledge and applied technical skills. The technician's work is somewhat akin to that of the professional, but more narrow in scope. The job requirements normally include those manipulative skills necessary to perform the technical tasks. These fields require considerable technical knowledge of the materials and processes involved as well as knowing how to apply the principles of physical and biological sciences. In general, instruments are used, in contrast to tools. The technician's contribution is mainly through mental effort in conjunction with application of skills. In many organizations a technician is not limited to a single position but is permitted to move vertically in the organization to higher levels of responsibilities. This, of course, is dependent upon the individual's capability and willingness to continue his education.

Developed With Industrial Cooperation

Various courses are offered to cover the basic knowledge and practices of present-day industry. Industrial leaders have been consulted to learn the kind of specific technical information required by persons who take jobs in industry. Many members of the instructional staff are drawn from local industries, but course administration, teaching material, and standards of instruction are under the direction of the departments involved.

ARCHITECTURAL TECHNOLOGY

This program prepares students for employment with architects, contractors, building materials suppliers, and various governmental agencies. Graduates accept positions as architectural draftsmen, estimators, planning technicians, field inspectors, and sales representatives. They may also continue their education toward a Bachelor of Science degree in Building Construction and Contracting.

The drafting courses begin with basic fundamentals and extend into wood frame systems, intermediate-sized buildings, and multibuilding complexes. Other drawing courses include presentation techniques.

Materials, surveying, specifications, estimating, mechanical equipment and other courses related to construction are also a part of the program.

Related courses in the areas of mathematics, physical sciences, and humanities are essential in the development of a person who wishes to advance in the field of construction.

Students contemplating future transfer to an accredited architectural school should contact the Department of Building Construction and Contracting.

FRESHMAN YEAR

First Semester

- (3) EG 110 (Drafting Fundamentals)
- (2) BC 200 (Materials & Methods)
- (3) CET 104 (Surveying)
- (3) MA 147 (Algebra & Trig. I)
- (3) ENGL 104 (English Comp. I)
- (3) COM 114 (Speech)

(17)

Second Semester

- (3) ART 150 (Architectural Construction I)
- (2) BC 170 (Plans & Specs.)
- (2) CET 208 (Route Surveying)
- (3) MA 148 (Algebra & Trig. II)
- (3) CET 160 (Statistics)
- (3) GNT 220 (Technical Report Writing)

(16)

Summer

- (1) BC 190 (Construction Work Experience) or
- (1) BC 195 (Construction Observation)

(1)

SOPHOMORE YEAR

Third Semester

- (3) ART 222 (Architectural Construction II)
- (3) ART 221 (Architectural Presentation)
- (3) Technical Elective
- (3) CET 260 (Strength of Materials)
- (3) ECON 210 (Economics)
- (3) Business Elective

(18)

Fourth Semester

- (3) ART 224 (Architectural Construction III)
- (3) BC 230 (Mechanical & Electrical Equipment)
- (2) BC 270 (Estimating)
- (3) CET 280 (Structural Calculations)
- (4) PHYS 220 (Physics)

(15)

CIVIL ENGINEERING TECHNOLOGY

This program is designed to prepare students for employment with land surveyors, highway departments, contractors, city engineering offices, and engineering consultants, as well as with other specializations of civil engineering. Graduates accept positions as topographers, structural draftsmen, steel and concrete laboratory technicians, and as instrument men doing land surveys and highway surveys. With additional experience they may acquire positions as supervisors, or chiefs of parties, in a variety of work associated with civil engineering. They may also continue their education by pursuing a Bachelor of Science degree in Building Construction and Contracting.

The surveying courses in this program begin with basic operation and use of equipment and progress through route surveying, land surveying, and subdivision.

Other groups of courses consider structural systems, materials, strength of materials, and specifications and estimating.

To broaden the technician's ability to communicate in words and figures, courses in mathematics, physical science, and communicative skills are required.

FRESHMAN YEAR

First Semester

- (3) EG 110 (Drafting Fundamentals)
- (2) BC 200 (Materials & Methods)
- (3) CET 104 (Surveying)
- (3) MA 150 (Algebra & Trig.)
- (3) ENGL 104 (English Comp. I)

(14)

Second Semester

- (3) ART 150 (Architectural Construction I)
- (2) BC 170 (Plans & Specs.)
- (2) CET 208 (Route Surveying)
- (3) CET 160 (~~Statistics~~ **STATICS**)
- (3) GNT 220 (Tech. Report Writing)
- (3) COM 114 (Speech)

(16)

Summer

- (1) BC 190 (Construction Work Experience) or
- (1) BC 195 (Construction Observation)

(1)

SOPHOMORE YEAR

Third Semester

- (3) CET 260 (Strength of Materials)
- (3) CET 209 (Subdivision)
- (3) CET 253 (Hydraulics & Drainage)
- (3) ECON 210 (Economics)
- (3) MA 223 (Calculus)
- (3) Business Elective

(18)

Fourth Semester

- (3) BC 270 (Estimating)
- (3) CET 280 (Structural Calc.)
- (4) PHYS 220 (Physics)
- (3) Technical Elective
- (3) Math/Science Elective

(16)

COMPUTER TECHNOLOGY

This two-year associate degree program is designed to produce a graduate competent in computer programming in either the commercial or technical area, depending on which of the two options is selected. It prepares a person to perform the following functions: analyze problems, design flowcharts, write computer programs, verify programs, and evaluate and modify existing programs. It also familiarizes him with procedures common in his area of specialization.

Graduates may continue their education by pursuing a Bachelor of Science degree with a major in computer technology.

Commercial Option

FRESHMAN YEAR

First Semester	Second Semester
(5) CPT 115 (Introduction to Data Processing)	(3) CPT 122 (Computer Mathematics)
(5) MA 150 (Mathematics for Technology)*	(3) CPT 261 (RPG Programming)
(3) ENGL 104 (English Composition I)	(3) CPT 264 (FORTRAN Programming)
(3) MGMT 200 (Introductory Accounting)	(3) MGMT 201 (Cost Accounting)
(1) ENGL 185 (Developmental Reading)	(3) COM 114 (Fundamentals of Speech Communication)
	(3) Elective
<hr/> (17)	<hr/> (18)

SOPHOMORE YEAR

Third Semester	Fourth Semester
(4) CPT 133 (Assembly Language Programming I)	(4) CPT 134 (Assembly Language Programming II)
(3) CPT 225 (Statistical Methods)	(3) CPT 254 (Commercial Systems Applications)
(3) CPT 265 (Cobol Programming)	(3) CPT 286 (Computer Operating Systems I)
(3) GNT 220 (Technical Report Writing)	(2-4)CPT 290 (Computer Project)
(3) ECON 210 (Principles of Economics)	(3) Elective
<hr/> (16)	<hr/> (15-17)

For the associate degree, 65 credit hours are required. Students preferring a more mathematics-science oriented sequence may take: (6) MA 223-224 (Introductory Analysis I and II); (6) Laboratory Science (two-semester sequence); (3) CPT 220 (Numerical Methods I); CPT 254, CPT 261, CPT 265 (instead of MGMT 200-201).

* Superior students with adequate preparation may take MA 163 or other equivalent mathematic courses as a substitute for this required course.

ELECTRICAL ENGINEERING TECHNOLOGY

The electrical engineering technology program is a combination of courses in electrical engineering technology, mathematics, science, and general academic subjects that leads to the degree of Associate in Applied Science. The program is designed to prepare students for employment as electronic technicians in research laboratories, electronic industries, and in any industry that uses electrical power or electronic controls.

The basic curriculum will provide the student with sufficient education to find employment in the fields of communications electronics, industrial electronics, microwaves, military electronics, computer electronics, automation, electronic servicing, television, electrical power, aviation electronics, and others. Specialization in these areas is provided by technical elective courses in the second year of the program.

The duties of the electronic technician could be: construction, testing, and troubleshooting of experimental circuits in research laboratories; installation, maintenance, troubleshooting, operation, and testing of electrical and electronic equipment in industries; sales and service of electronic equipment, etc.

Electronic technicians have the following job classifications: research or laboratory technician, electronics engineering technician, engineering development technician, product design technician, systems test technician, field service technician, production technician, maintenance technician, instrument technician, inspectors, electronic specialist, radio operator, and many others.

After experience and continued technician growth, graduates hold such positions as junior engineer, sales engineer, field engineer, customer service engineer, applications engineer, supervisor, manager, foreman, contractor, electrical estimator, broadcast engineer, etc.

Students who obtain the degree of Associate in Applied Science are eligible for consideration for admission to curricula leading to the degree of Bachelor of Science. Approximately two additional years of study are necessary to complete the requirements for this degree.

FRESHMAN YEAR

First Semester	Second Semester
(4) EET 102 (Electrical Circuits I)	(4) EET 152 (Electrical Circuits II)
(3) EET 104 (Electronics I)	(4) EET 154 (Electronics II)
(5) MA 150 (Mathematics for Technology)†	(4) PHYS 220 (General Physics)
(3) GNT 220 (Technical Report Writing)	(3) MA 223 (Calculus for Technology I)
<hr/>	<hr/>
(15)	(15)

†Student may elect to take the mathematics sequence MA 147 (Algebra and Trigonometry for Technology I) for three credit hours and MA 148 (Algebra and Trigonometry for Technology II) for three credit hours.

SOPHOMORE YEAR

Third Semester	Fourth Semester
(3) MA 224 (Calculus for Technology II)	(4) EET 254 (Electronics IV)
(4) EET 204 (Electronics III)	(4) EET elective
(4) EET 212 (Electric Machinery)	(3) EG 110 (Drafting Fundamentals)
(4) Electrical Engineering Elective	(3) Nontechnical elective
(3) COM 114 (Fundamentals of Speech Communication)	(3) Science or mathematics elective
<hr/>	<hr/>
(18)	(17)

INDUSTRIAL ENGINEERING TECHNOLOGY

This major field of specialization is designed to develop technicians to support the problem-solving and decision-making functions in management and to prepare for planning and control, work method analysis, work measurements, quality assurance and controls, and systems and procedures analysis. Practical applications of production-oriented operations research techniques, data processing and computer programming fundamentals are stressed.

The industrial engineering technician is often initially employed in the time study, quality control, production control, or plant layout department. As he gains experience, he may advance within the department, directly assisting a professional industrial engineer, or he may become a production supervisor. This broad technical background, together with the human relations background and a proficiency in engineering methods and mathematics, enables the industrial engineering technician to take advantage of opportunities for advancement in many directions.

FRESHMAN YEAR

First Semester	Second Semester
(3) EG 110 (Drafting Fundamentals)	(3) English*
(3) IET 104 (Industrial Organization)	(3) IET 204 (Techniques of Maintaining Quality)
(5) MA 150 (Mathematics for Technology)	(3) CPT 200 (Computer Programming Fundamentals)
(1) MET 100 (Applied Engineering Computations)	(3) STAT 401 (Elementary Statistical Methods)
(4) PHYS 220 (General Physics)	(2) MET 335 (Basic Machining)
	(4) PHYS 221 (General Physics)
<hr/>	<hr/>
(16)	(18)

*Students will be counseled into ENGL 100 and 286, 100, 104 or 105 depending on the individual student's needs.

SOPHOMORE YEAR

Third Semester

- (3) ECON 210 (Principles of Economics)
- (3) IET 224 (Production Planning and Control)
- (3) IET 262 (Motion Study and Work Methods)
- (3) SPV 252 (Human Relations)
- (2) IET 220 (Critical Path Analysis)
- (3) Technical elective

(17)

Fourth Semester

- (3) GNT 220 (Technical Report Writing)
- (3) IET 250 (Fundamentals of Production Cost Analysis)
- (3) IET 266 (Work Measurement and Incentives)
- (3) COM 114 (Fundamentals of Speech Communication)
- (4-6) Technical electives

(16-18)

TECHNICAL ELECTIVES

Methods Improvement Option

- (3) IET 120 (Systems and Procedures)
- (2) IET 272 (Job Evaluation)
- (2) IET 296 (Industrial Technology Case Problems)

Material Handling Option

- (3) IET 268 (Plant Layout)
- (3) IET 312 (Materials Handling)
- (2) IET 296 (Industrial Technology Case Problems)

Supervision Option

- (3) SPV 240 (Labor Relations Problems)
- (3) SPV 331 (Safety)
- (3) SPV 374 (Supervision)
- (3) SPV 350 (Applied Creativity for Business and Industry)

MECHANICAL ENGINEERING TECHNOLOGY

This program of study is designed to prepare students to take employment in industries requiring services of drafting and design of a mechanical nature.

Emphasis is placed on product and tool design, mechanical maintenance, testing, inspection, and the selection of methods for efficient and economical production.

Also included are courses dealing with fundamentals of industrial management and with some of the historical, economic, and human relations aspects of our American industrial life, all related to the individual.

Graduates of this program accept jobs as laboratory technicians, engineering assistants, detailers, draftsmen, tool maintenance men, layout men, inspectors, and machine and tool salesmen. With additional experience students may aspire to positions as industrial supervisors, machine and tool designers, tool buyers, production expeditors, and cost estimators.

A cooperative work program with industry may be made available to the student, to be worked out on an individual student basis.

FRESHMAN YEAR

First Semester	Second Semester
(2) MET 180 (Materials and Processes)	(2) MET 256 (Material Fabrication)
(2) MET 210 (Applied Statics)	(4) MET 211 (Applied Strength of Materials)
-(3) EG 110 (Drafting Fundamentals)	(3) MET 204 (Production Drawing)-
-(3) MA 147 (Algebra & Trig. for Technology I)	(3) MA 148 (Algebra & Trig. for Technology II)
-(3) ENGL 104 (English Composition I)	(4) PHYS 220 (General Physics)
-(3) SPV 252 (Human Relations in Supervision)	
(16)	(16)

32
32
64

SOPHOMORE YEAR

Third Semester	Fourth Semester
(3) MET 200 (Power Systems)	(4) MET 216 (Machine Elements)
-(3) COM 114 (Fundamentals of Speech Communication)	(3) MET 330 (Introduction to Fluid Power)
-(3) Nontechnical elective	(6) Technical electives
(3) MA 223 (Introductory Analysis I)	(3) MA 224 (Introductory Analysis II)
(4) PHYS 221 (General Physics)	
(16)	(16)

NURSING

This program of nursing education provides a means of correlating the philosophy and standards of nursing education with those of general education. The overall standards and policies of the University apply to the program in nursing as they do to the other educational programs within the University. The associate degree program is designed to fulfill the educational needs of qualified high school graduates who want to (1) prepare for nursing in a relatively short time and function as nurses while at the same time continuing their education and (2) study in a multipurpose collegiate institution where they share the responsibilities, privileges, intellectual, and social experiences with all other students. Clinical practice experiences are obtained in nearby cooperating hospitals. The University nursing faculty selects, supervises, and evaluates all learning experiences.

Graduates are prepared to give care to patients welfare with other members of the nursing and health staff, and to be self-directive in learning from experience as practicing nurses.

Graduates of the associate degree program in nursing are eligible for state examinations for licensure as registered nurses.

FRESHMAN YEAR

First Semester	Second Semester
(3) BIOL 203 (Biology of Man and Laboratory in Human Biology)	(3) BIOL 204 (Biology of Man and Laboratory in Human Biology)
(3) CHEM 119 (General Chemistry)	(3) BIOL 220 (Microbiology)
(3) PSY 120 (Elementary Psychology)	(3) ENGL 104 (English Composition I)
(6) NT 115 (Nursing I Introduction to Nursing)	(3) PCOL 201 (Pharmacology)
	(6) NT 116 (Nursing II Medical-Surgical Nursing of Adults and Children)
<hr/> (15)	<hr/> (18)

SOPHOMORE YEAR

Third Semester	Fourth Semester
(10) NT 224 (Nursing III Medical-Surgical Nursing of Adults and Children)	(5) NT 225 (Maternal Child Health Nursing)
(3) NT 280 (Issues in Nursing)	(5) NT 240 (Psychiatric Mental Health Nursing)
(3) SOC 100 (Introductory Sociology)	(3) F&N 303 (Essentials of Nutrition)
	(3) Elective
<hr/> (16)	<hr/> (16)

SUPERVISION

This program is designed to meet the needs of the individuals who wish to improve their skills as first-line supervisors as well as their general education base.

Because of the many different types of industries and different supervision needs, each supervision student's program is planned jointly by him, a representative of his firm, and an academic adviser to meet those individual needs.

The curriculum is college level, culminating in the awarding of the Associate in Applied Science degree. Graduates of the program are eligible to continue toward a Bachelor of Science degree in supervision.

General Plan of Study

CORE

Course Number	Course Title	Credit Hours
SPV 252	(Human Relations)	3
SPV 331	(Safety)	3
IET 104	(Industrial Organization)	3
SPV 374	(Supervision)	3
Total		<hr/> 12

COMMUNICATIONS AREA

English composition or speech	3
Any area in communication	3
Total	<hr/> 6

FUNCTIONAL AREA

Recognizing that supervisors work in various functional areas, each student will be expected to select one or more groups of courses that are designed to increase technical effectiveness on the job. The following are examples of existing functional areas.

Quality Control	
Methods Improvement	
Materials Handling	
Production Planning	
Personnel Relations	
Labor Relations	
Manufacturing Technology	
Mechanical Technology	
Total	15 credit hours

SUPPORTIVE AREA

Each supervisor should have a balanced educational experience. Therefore, he should take certain technical and nontechnical courses. Some of the more typical courses considered applicable are listed below:

Nontechnical	
MGMT 200	(Accounting)
MGMT 201	(Cost Accounting)
SOC 100	(Introductory Sociology)
PSY 120	(Elementary Psychology)
GNT 220	(Technical Report Writing)
ECON 210	(Principles of Economics)
SPV 375	(Basic Methods of Training)
SPV 376	(Personnel Problems)
IET 250	(Fundamentals of Production Cost Analysis)
Requirements	12-18 credit hours

Technical	
MA 150	(Algebra and Trigonometry)
CHM 111	(General Chemistry)
and 112	
PHYS 220	(General Physics)
and 221	
MET 100	(Applied Engineering Calculations)

Engineering and technology courses to be selected on the basis of the individual's career objectives and qualifications.

Requirements	12-18 credit hours
Grand Total	62 credit hours

CERTIFICATE PROGRAMS

The certificate programs are designed primarily for the more mature part-time student through consultation with representatives from labor, industry, and the service areas of our society.

These are intensive and practical programs of less than 40 semester hours of credit. Advancement in each of these programs can be varied to suit the needs of the individual students who may take one, two, or three courses each semester. The average part-time student can complete any one of the programs within three years.

Enrollment is on the basis of a program carefully tailored to meet individual student needs and vocational objectives through consultation with an experienced counselor. Changes in the student's program arising out of new work assignments or changes in vocational objective may be worked out with his counselor.

Professional Foremanship

The Professional Foremanship Certificate Program is an intensive and practical curriculum equivalent to 36 semester hours. It is intended to provide foremen with the professional education needed to handle the many supervisory and technical problems which they meet daily in technical, communications, and human relations fields.

The program has been set up by representatives of industry, professional foremen organizations, and the University. It is designed to meet the needs of management, which is vitally concerned with training foremen for positions of leadership. Course selection is on the basis of a program worked out with the counselor assigned and is carefully tailored to individual needs.

Admission to the program is granted to those mature adults in management positions who meet the entrance standards and requirements.

Candidates may be admitted as degree or nondegree students. Specific questions concerning the program should be directed to the professional foremanship coordinator at the North Central Campus.

REQUIRED COURSES

(9 credit hours)

- (3) IET 104 (Industrial Organization)
- (3) SPV 252 (Human Relations in Supervision)
- (3) COM 114 (Fundamentals of Speech Communication)

CORE CURRICULUM

(6 credit hours)

Two of the following three courses are required in the basic core curriculum.

- (3) IET 104 (Industrial Organization)
- (3) SPV 240 (Labor Relations)
- (3) SPV 374 (Supervision)

ELECTIVES

(9 credit hours)

Additional courses to make a total of 24 credit hours may be chosen in any approved combination.

MANAGEMENT EXPERIENCE

(Equivalent to 12 semester hours)

Before receiving the Professional Foremanship Certificate, the candidate must have had two years of successful experience in the management field. Satisfaction of this requirement is met by a confirming letter from the managerial employer under whom the candidate worked. Formal credit is not established for this work, but is considered equivalent to 12 semester hours of credit in the Professional Foremanship Program.

BACHELOR OF SCIENCE DEGREE IN INDUSTRIAL EDUCATION

The Department of Industrial Education consists of two sections: industrial arts and vocational-technical. Each section is concerned with one or more programs and activities designed to equip men and women for entrance into career fields that require an intellectual base upon which practical applications of the knowledge gained in the humanities, the sciences, and the technologies depend. Thus, the courses provided offer a combination of theoretical and practical education.

Graduate and undergraduate programs which prepare students for entrance into a variety of careers in business, education, government, and industry are available. Students may elect to pursue an option or major which will lead to the degree of Bachelor of Science in Industrial Education with a specialty in one of the following areas:

1. Technology teaching (junior college and technical institute teaching)
2. Industrial arts teaching
3. Vocational-industrial teaching

BACHELOR OF SCIENCE DEGREE FOR A.A.S. TECHNICIANS

Through its School of Technology, the University has recognized the need of the graduate of two-year Associate in Applied Science degree and similar curricula for further and broader education. New third- and fourth-year curricula have been especially developed to lead to the Bachelor of Science degree for such students.

The baccalaureate program provides the general education which permits the graduate to engage in a significantly broader span of activities. It provides a very important background in interdisciplinary studies and creates a greater potential for the graduate. It also enables the graduate to do additional work in his area of specialization.

This program was designed by the School of Technology with the active assistance of industry. It is offered to enable the engineering technician, and similar students who have completed an associate degree program, to improve his performance and increase significantly his promotability.

DEPARTMENT OF SUPERVISION

Undergraduate programs in the Department of Supervision are designed to prepare students for careers in supervisory management, personnel work, and

employee training and development. These careers are found in such organizations as businesses, educational institutions, government agencies, hospitals, and industrial firms. Supervision graduates are employed in these organizations in such positions as supervision, personnel, training and development, customer service, field engineering, plant engineering, production control, production engineering, process engineering, programming, project engineering, purchasing, quality control, sales, and technical writing.

In addition to the regular undergraduate four-year program, a student may choose to gain practical work experience by participating in the Supervision Cooperative Education Program.

Cooperative Education Program

The Supervision Cooperative Education Program is designed to combine university study and work-learning experience. The co-op student's work-learning experience is directly related to the plan of study he is following on campus, and it is obtained in an employing organization in either business, industry, or government. A rotational schedule (i.e., alternating semesters between the campus and the employing organization) provides the co-op student with a blend of earning, learning, and practical work experience. This approach makes both the classroom study and the work-learning experience more meaningful.

FRESHMAN YEAR

First Semester	Second Semester
(6) Technical Skills electives	(6) Technical Skills electives
(2) ENGL 101 (English Composition I)	(2) ENGL 102 (English Composition II)
(1) SPV 100 (Supervision Lectures)	(3) SPV 252 (Human Relations)
(5) MA 150 (Mathematics for Technology)	(3) SOC 100 (Introductory Sociology)
(2) Elective	(3) COM 114 (Fundamentals of Speech Communication)
<hr/>	<hr/>
(16)	(17)

SOPHOMORE YEAR

Third Semester	Fourth Semester
(3) Technical Skills elective	(3) SPV 374 (Supervision)
(3) ECON 210 (Principles of Economics)	(3) Technical Skills elective
(3) Communication selective	(3) IET selective
(3) SPV 462 (Supervised Work Experience)	(3) MGMT 200 (Introductory Accounting)
(3) Science elective	(3) Science elective
(2) Elective	
<hr/>	<hr/>
(17)	(15)

JUNIOR YEAR

Fifth Semester

- (3) SPV 375 (Basic Methods of Training)
- (3) MGMT 201 (Cost Accountin
- (3) SPV 331 (Occupational Safet and Health)
- (4) PHYS 218 (General Physics)
- (2) Elective

(15)

Sixth Semester

- (3) IET selective
- (3) MGMT 431 (Personnel Relations)
- (3) Introductory CS/CPT course
- (6) Elective

(15)

SENIOR YEAR

Seventh Semester

- (3) MGMT 430 (Labor Relations)
- (3) IET selective
- (4) SPV 474 (Conference Leadership)
- (3) GNT 220 (Technical Report Writing)
- (3) SPV 376 (Personnel Problems)

(16)

Eighth Semester

- SPV 574 (Managerial Training and Development)
- (3) SOC 416 (Industrial Sociology)
- (9) Elective

(15)

Graduate Study

GRADUATE COURSES are available at the Purdue North Central Campus under the auspices of the graduate School of Purdue University. All courses offered by the University at any campus are subject to the same standards of quality.

ADMISSIONS

Students may be admitted to the Graduate School and undertake work at the North Central Campus in one of two categories: (1) regular graduate students and (2) nondegree students.

Students enrolling in graduate courses who have been admitted to a graduate school should insure that the course in which they desire to enroll will be accepted in their plan of study.

Students who plan to be admitted to a graduate program in the future must understand that graduate courses taken prior to being admitted may or may not be approved by their graduate committee as a part of their degree requirements.

Regular Graduate Students

Students who have advanced degree objectives will be admitted as regular graduate students if they have the following qualifications:

They will ordinarily be expected to hold a baccalaureate degree from a college or university of recognized standing. Under special circumstances individuals who do not have a baccalaureate degree will be considered for admission if they have completed studies equivalent to those required for a baccalaureate degree program at Purdue.

All candidates for admission as regular graduate students must show promise, as judged by academic performance and experience, of ability to perform advanced study and research, and must have adequate preparation in their chosen field of study. Applicants must submit complete official transcripts of all previous college and university studies.

Nondegree Students

Such students are not admitted with advanced degree objectives and are not eligible to become candidates for advanced degrees under this classification.

Subclassifications at the North Central Campus are:

1. Temporary graduate students admitted on the basis of the educational services which can be extended to them in meeting their individual needs—other than degrees.
2. Teaching license objectives which are intended for baccalaureate degree holders seeking to work on teacher license programs without degree objectives either preceding or following an advanced degree program.
3. Nondegree or temporary students should realize that no more than nine semester hours of credit may be applied to a regular plan of study if they subsequently become regular graduate students.

GRADUATE ADVISING

Graduate programs are intended to be highly individualized, whenever feasible, thus each student is guided by a major professor and an advisory committee. Degree-seeking students should contact the assigned graduate adviser for assistance.

GRADUATE RECORD EXAMINATION

An applicant who falls in one or more of the following four categories is expected to take the Aptitude Test Section of the Graduate Record Examination.

1. If he received his bachelor's degree from a nonaccredited institution.
2. If he expects to major in aeronautics, astronautics, and engineering sciences; chemical engineering; child development and family life; clothing and textiles; economics; equipment and family housing; foods and nutrition; history; home management and family economics; industrial education; industrial relations; institutional management; nuclear engineering; physical education for women; political science, psychology; or sociology. Other departments may be added to this list.
3. If he feels that his previous academic record does not adequately reflect his ability.
4. If he is to be considered for certain fellowship programs. He will be informed of this requirement when he applies for the fellowship.

Information regarding testing dates and locations may be obtained by writing to the Educational Testing Service, Box 955, Princeton, New Jersey 08540.

GRADUATE COURSE DESCRIPTION

Descriptions of specific courses may be found in *The Graduate School* bulletin.

Description of Courses

COURSES NUMBERED 1-499 are primarily for undergraduate students. Courses numbered 500-599 are for undergraduates (usually juniors and seniors) and graduate students. Courses numbered 600 and above are for graduate students.

For each course the first line of the description should be interpreted as follows: first, the official number of the course; second, its special title; and third, the number of class, laboratory, and credit hours.

School of Agriculture

Dean R. L. Kohls in Charge, West Lafayette
Clyde L. Porter in Charge, Westville

AGRICULTURE

AGR 101. AGRICULTURAL LECTURES. Class 2, cr. 1. To acquaint new students in agriculture with the important problems and opportunities in the various fields of agriculture.

AGRICULTURAL ECONOMICS

AGEC 100. INTRODUCTORY AGRICULTURAL BUSINESS AND ECONOMICS. Class 3, cr. 3. The role and characteristics of farm and off-farm agricultural business in our economy; introductory economic and business principles involved in successful organization, operation, and management.

AGEC 330. MANAGEMENT METHODS FOR AGRICULTURAL BUSINESS. Class 3, cr. 3. Management of the nonfarm firm, with emphasis on business selling to farmers and handling their products. Production; merchandising; advertising and sales promotion; financial management; employee relations; general administrative policy formulation and administration.

AGRONOMY

AGRY 105. CROP PRODUCTION. Class 2, Lab. 2, cr. 3. Fundamental principles of crop production and distribution. Emphasis is placed on applying technological advances in agronomy to active crop production situations, including basic soils, agricultural meteorology, and crop physiology and breeding.

AGRY 255. SOIL SCIENCE. Class 1, Rec. 1, Lab. 3, cr. 3. Prerequisite: one year college chemistry. Differences in soils; soils genesis; physical, chemical, and biological properties of soils; relation of soils to problems of land use and pollution; soil management relative to tillage, erosion, drainage, moisture supply, temperature, aeration, fertility and plant nutrition. Introduction to fertilizer chemistry and use.

AGRY 430. GENETICS. Class 3, cr. 3.
Prerequisites: BIOL 108 and 109, or equivalent.

The transmission of heritable traits; probability; genotypic-environmental interactions; chromosomal aberrations; polyploidy; gene mutations; genes in populations; the structure and function of nucleic acids; biochemical genetics; molecular genetics; coding.

AGRY 430L. GENETICS LABORATORY.
Lab. 2, cr. 1. Prerequisite or corequisite: AGRY 430.

Experiments and demonstrations with higher plants, fruit flies, flour beetles, bacteria, bacterial viruses, and fungi to elucidate the basic principles of genetics.

ANIMAL SCIENCES

ANSC 101. ANIMAL AGRICULTURE.
Class 3, cr. 3.

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet.

ANSC 221. INTRODUCTION TO ANIMAL NUTRITION. Class 3, cr. 3. Prerequisite: CHM 111 or 112, or equivalent.

A study of the digestive processes, composition of foodstuffs, nutritional requirements, and formulation of practical rations for farm animals.

FORESTRY AND CONSERVATION

FOR 482. NATURAL RESOURCES AND MAN. Class 3, cr. 3.

A survey of the interrelationships among man, natural resources, and the environment. Course satisfies conservation requirement for teacher certification.

Community College

Dr. James J. Countryman in Charge, Westville

BRIDGE PROGRAM

Professor: R.F. Schwarz

GNC 100. STUDY SKILLS. Class 3, Cr. 3.

Procedures and practices for the development of good study habits. Includes techniques for better listening, note-taking, textbook reading, time-budgeting, and writing themes and reports.

GNC 101. TESTING, SELF-ANALYSIS, AND COUNSELING. Class 3, cr. 3.

Students take, score, and analyze results of selected objective tests. Each test is studied to determine its objectives, reliability, and validity. Each student will develop a profile of himself based on what he learns from the tests.

GNC 102. TECHNICAL PHOTOGRAPHY. Class 1, Lab. 5, cr. 3.

Basic concepts in and techniques of still photography leading to sophisticated techniques in biophotography and telephotography. Extensive laboratory experience in all phases including applications to medical photography.

GNC 160. ARITHMETIC AND FUNDAMENTALS OF ALGEBRA.
Class 3, Lab. 2, cr. 3.

Review of arithmetic and introduction to elements of high school algebra. Extensive use of word problems to teach basic concepts.

GENERAL BUSINESS

Associate Professor: J. R. Blackwell
Assistant Professor: L. H. Krause

GNC 126. PERSONAL FINANCE. Class 3, cr. 3.

General business from the point of view of the consumer. Topics include use of credit, banking, insurance, investment, budgeting and taxation.

GNC 127. INTRODUCTION TO BUSINESS. Class 3, cr. 3.

This is an introductory course which, through a very broad approach, attempts to acquaint the student with existing principles and problems of business and industry. Such topics as American businesses, management, marketing, finance, insurance, physical location, and lay-out are included.

GNC 128. PRINCIPLES OF TAX PREPARATION. Class 3, cr. 3.

A basic survey of the principles of tax preparation for the nonaccountant. The course will include the basic skills for preparing and maintaining the necessary financial documents required for tax preparation and the minimum information required for preparation of individual, proprietorship, partnership and small corporation tax returns and forms.

GNC 131. BUSINESS COMMUNICATIONS I. Class 3, cr. 3.

The study of the language and etiquette of business letters and other intra- and inter-office communication. Instructions in basic grammar, punctuation, and dictionary usage with applications in business letters and reports.

GNC 161. BUSINESS MATH I. Class 3, cr. 3.

A study of insurance, taxation, banking, credit, interest, and applied office problems.

GNC 224. ADMINISTRATIVE OFFICE PROCEDURES. Class 3, cr. 3.

A survey of the general operations, work flow, methods, procedures, equipment, and costs of an administrative office of an organization. The course contents will include an understanding of the necessary requirements for efficient operations of both the small administrative office and/or a section of a larger administrative unit.

GNC 227. PRINCIPLES OF ACCOUNTING I. Class 3, cr. 3.

The accounting foundation of business training; a study of accounting principles

and useful application of accounting methods through sole proprietorship, partnership, and corporation accounting. Extensive use of problems and practice sets.

GNC 228. PRINCIPLES OF ACCOUNTING II. Class 3, cr. 3. (Prerequisite: GNC 227 or equivalent)

A continuation of Accounting I. Emphasizes the study of accounting sheets, income statements, owner's equity and other financial statements included. Extensive use of problems and practice sets.

GNC 230. ORAL COMMUNICATIONS FOR BUSINESS PERSONNEL. Class 3, cr. 3.

A study of various aspects of oral communication in the office, including such areas as interpersonal communication, interviewing, oral reporting, and appropriate personal mannerisms for business associations.

GNC 231. BUSINESS COMMUNICATIONS II. Class 3, cr. 3. (Prerequisite: GNC 131 or equivalent)

A continuation of GNC 131.

GNC 261. BUSINESS MATH II. Class 3, cr. 3. (Prerequisite: GNC 161 or equivalent)

A continuation of GNC 161. Algebra and statistics with applications to business problems.

GNC 327. COST ACCOUNTING. Class 3, cr. 3. (Prerequisite: GNC 228 or equivalent)

Fundamentals of cost accounting procedures, including job cost, principles, and practices. Extensive use of problems and practice sets.

GNC 328. PRINCIPLES OF RETAILING. Class 3, cr. 3.

Course will cover types of institutions, store location, layout, fixtures and equipment, store organization, and retail sales. A study will be made of prices, discounts, mark-up, mark-down, and other problems of sales and merchandising.

GNC 329. PRINCIPLES OF MARKETING. Class 3, cr. 3.

An analysis of marketing covers both the various essential functions that must be performed in marketing and the numerous

and varied types of institutions performing role of marketing.

GNC 420. BUSINESS LAW. Class 3, cr. 3.

A course designed to give students an understanding of laws covering business transactions. Course will cover uniform commercial code, contracts, negotiable instruments, sales of personal and real property. The laws governing partnerships, corporations, and individual entrepreneur will be studied.

GNC 421. BUSINESS DATA PROCESSING. Class 3, cr. 3

An introduction to basic methods, techniques, and systems of electronic data processing: includes writing of simple programs and discussion of the use of computer data in business management.

SECRETARIAL ARTS

Assistant Professor: M.A. Cook

GNC 120. SEMINAR ON OFFICE PRACTICE. Class 2, cr. 2.

An overview of office procedures covering a variety of topics including business organization, job opportunities, and personal and professional requirements of a secretary/clerk-typist.

GNC 121. TYPING I: Basic. Class 1, Lab. 4, cr. 3.

These courses would start with basic principles and progress with the student's speed and proficiency to a minimum of 50 words per minute. Open to non-secretarial students on a space-available basis.

GNC 221. TYPING II: ADVANCED. Class 1, Lab. 4, cr. 3. Prerequisite: GNC 121.

These courses would start with basic principles and progress with the student's speed and proficiency to a minimum of 50 words per minute. Open to non-secretarial students on a space-available basis.

GNC 123.FILING SYSTEMS. Class 2, cr. 2.

A study of alphabetic, geographic and numeric filing systems with applications.

GNC 124.ACCOUNTING FOR SECRETARIES. Class 3, cr. 3.

Provides basic understanding of accounting principles and procedures and a

GNC 427. FINANCIAL ACCOUNTING. Class 3, cr. 3. (Prerequisite: GNC 228 or equivalent)

A study of the valuation of current assets and liabilities, plant equipment, depreciation technique with their effect on income. A measurement of liabilities, ratios and reserves. Financial statement analysis.

GNC 428. RETAILING SEMINAR. Class 3, cr. 3.

Case studies of retailing problems, discussion of problems encountered in on-the-job training plus guest lecturers from retail management.

familiarity with the financial records and accounting terminology used in business today.

GNC 131.WRITTEN COMMUNICATIONS FOR SECRETARIES. Class 3, cr. 3.

The study of the language and etiquette of business letters and other intra- and inter-office communications which will enable the secretary to communicate clearly and correctly. Instructions in basic grammar, punctuation, dictionary usage with applications in business letters and reports. GNC 231 is a continuation of GNC 131.

GNC 231.WRITTEN COMMUNICATIONS FOR SECRETARIES II. Class 3, cr. 3. Prerequisite: GNC 131.

The study of the language and etiquette of business letters and other intra- and inter-office communications which will enable the secretary to communicate clearly and correctly. Instructions in basic grammar, punctuation, dictionary usage with applications in business letters and reports. GNC 231 is a continuation of GNC 131.

GNC 161.MATHEMATICS OF PERSONAL AND BUSINESS FINANCES. Class 3, cr. 3.

A study of insurance, taxation, banking, credit, interest and applied office problems.

GNC 223. OFFICE MACHINES, USE OF. Class 1, Lab. 2, cr. 2. Prerequisite: GNC 121.

To develop competence in the use of various office machines in current use.

GNC 230. ORAL COMMUNICATIONS FOR BUSINESS PERSONNEL. Class 3, cr. 3. Prerequisite: GNC 131.

A study of various aspects of oral communication in the office, including such areas as interpersonal communication, interviewing, oral reporting, and appropriate personal mannerisms for business associations.

GNC 122. STENOGRAPHY I: BASIC. Class 2, Lab. 3, cr. 3.

These courses aim at sharpening stenographic efficiency to a minimum of 100 words per minute for three minutes of sustained dictation. Emphasis is on theory

vocabulary, and typewriter transcription. Open to non-secretarial students on a space-available basis.

GNC 222. STENOGRAPHY II: INTERMEDIATE. Class 2, Lab. 3, cr. 3.

These courses aim at sharpening stenographic efficiency to a minimum of 100 words per minute for three minutes of sustained dictation. Emphasis is on theory vocabulary, and typewriter transcription. Open to non-secretarial students on a space-available basis.

GNC 322. STENOGRAPHY III: ADVANCED. Class 2, Lab. 3, cr. 3.

These courses aim at sharpening stenographic efficiency to a minimum of 100 words per minute for three minutes of sustained dictation. Emphasis is on theory vocabulary, and typewriter transcription. Open to non-secretarial students on a space-available basis.

Schools of Engineering

Dean J. C. Hancock in Charge, West Lafayette

AERONAUTICS AND ASTRONAUTICS

Assistant Professor: J. C. Hayes.

ESC 223. MECHANICS OF MATERIALS. Class 3, cr. 3. Prerequisite: ESC 205.

Analysis of stress and strain; equations of

equilibrium and compatibility; stress-strain laws; extension, torsion, and bending of bars; membrane theory of pressure vessels; elastic stability; selected topics.

CIVIL ENGINEERING

EG 110. DRAFTING FUNDAMENTALS. Class 1, Lab. 6 cr. 3.

A basic course in drawing orthographic projection, pictorial drawing, print reading, and reproduction of drawings. Problems designed to require practical reasoning and develop good techniques.

EG 116. GRAPHICS I. Class 1, Lab. 4, cr. 2.

Basic graphical methods-instrument and freehand-useful in engineering layout and design for analysis and communication. Multiview representation with some sketching and basic dimensioning practices. Auxiliary views with sectioning and some conventional representations. Engineering lectures and counseling for scheduling by Department of Freshman Engineering.

School of Consumer and Family Sciences

(Formerly the School of Home Economics)

Dean N. H. Compton in Charge, West Lafayette

F&N 303. ESSENTIALS OF NUTRITION. Class 3, cr. 3. No Prerequisites: Credits not given for both F&N 303 and 315.

Basic nutrition and its application in meeting needs of all ages. Consideration is given to food selection and legislation and community nutrition education programs.

H 585. FAMILY AND CONSUMER LAW. Class 3, cr. 3. Prerequisite:

Must be preceded by senior standing.

A study of the legal rights, responsibilities, and resources of individuals as they function within the family and society as family members and consumers. Planned especially for professional (non-lawyers) who work with families in the fields of home economics, family life and consumer education, nursing, social welfare, pastoral care, and community development.

School of Humanities, Social Science, and Education

Dean R. L. Ringel in Charge, West Lafayette

COMMUNICATION

Associate Professor: E. F. Buck.

COM 114. FUNDAMENTALS OF SPEECH COMMUNICATION. Class 3, cr. 3.

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through problem identification and solution in discussion, to informative and persuasive speaking in standard speaker-audience situations.

COM 240. INTRODUCTION TO ORAL INTERPRETATION. Class 3, cr. 3. Prerequisite: COM 114.

Effective reading of prose, poetry, and drama after an analysis of the meaning and emotional content in each selection. Theory and practice.

COM 252. NEWS REPORTING. Class 1, Lab 3, cr. 3. Prerequisite: COM 250.

Style, news values, and story construction in newspaper writing. Extensive practice in writing various principal types of news stories for the American press. (Typing ability is highly desirable.)

COM 315. SPEECH COMMUNICATION OF TECHNICAL INFORMATION. Class 3, cr. 3. Prerequisite: COM 114. Open only to students enrolled in the School of Technology.

The organization and presentation of information of a practical technical nature. Emphasis is placed upon the study, preparation, and use of audio-visual materials in such presentations.

COM 318. PRINCIPLES OF PERSUASION. Class 3, cr. 3. Prerequisite: COM 114 or consent of instructor.

Persuasion and its effects on behavior with emphasis on evidence and reasoning and on emotional and personal proof; practice in critical reception as well as effective composition of persuasive discourse.

COM 320. GROUP DISCUSSION AND CONFERENCE LEADERSHIP. Class 3, cr. 3. Prerequisite: COM 114.

A study of group thinking and problem-

solving methods; participation in and evaluation of committee and informal discussion groups.

COM 357. HIGH SCHOOL PUBLICATIONS. Class 3, cr. 3.

Study of the functions, mechanics, and writing techniques of high school newspapers and yearbooks. A survey of editorial, business, and production aspects of student publications with some news writing assignments. Instruction in teaching high school journalism. Recommended for

prospective teachers of English.

COM 415. DISCUSSION OF TECHNICAL PROBLEMS. Class 3, cr. 3. Prerequisite: COM 315. Open only to students in the School of Technology.

Principles of speech communication related to interpersonal and group discussions on technical topics and problems; practice in using these models in situations typically encountered by the technologists.

CREATIVE ARTS

Art and Design

A&D 201. ART FOR ELEMENTARY SCHOOL TEACHERS. Class 2, Studio 4, cr. 4.

Art theory and experiences and curriculum theory and materials preparatory to instruction of elementary school children.

A&D 355. ART APPRECIATION. Class 3, cr. 3. Not open to freshmen.

Understanding and appreciation of the problems overcome by mankind in the origins and growth of art. Satisfies the aesthetics requirement of the School of Humanities, Social Science, and Education.

Music

MUS 250. MUSIC APPRECIATION. Class 3, cr. 3.

An introduction to the understanding of music. How to listen to its materials. A study of the media, forms, styles, and composers through recorded, live, and film media. Methods used in the structure of music as well as the aesthetic values present in music are also emphasized. Satisfies the aesthetics requirements of the School of Humanities, Social Science, and Education.

EDUCATION

Associate Professor: L. R. Blythe

UNDERGRADUATE LEVEL

Lower-Division Courses

ED 249. DIRECTED OBSERVATION IN THE ELEMENTARY SCHOOL.* Lab. 3, cr. 1.

Directed observation for one-half day per week in elementary school classrooms. Individual and group conferences and written records are required.

ED 285. EDUCATIONAL PSYCHOLOGY. Class 3, cr. 3. Prerequisite: PSY 120.

An introduction to the application of psychological theories, research results, and methods of inquiry to educational problems, with particular emphasis on human development, learning, and measurement.

UNDERGRADUATE LEVEL

Upper-Division Courses

ED 320. TEACHING THE LANGUAGE ARTS IN THE ELEMENTARY SCHOOL.* Class 3, cr. 3.

Materials and methods of teaching oral and written language, listening, spelling, and handwriting in the elementary school.

ED 321. TEACHING ARITHMETIC IN THE ELEMENTARY SCHOOL.* Class 3, cr. 3.

Materials and methods used in teaching arithmetic at various grade levels in the elementary school.

*Prerequisite: admission to the elementary education curriculum.

ED 324. MUSIC FOR ELEMENTARY SCHOOL TEACHERS.* Class 3, cr. 3.

Basic musical experience, including elementary music skills. Principles and procedures of teaching music. Relationship of music to other subject areas. Music materials.

ED 326. TEACHING READING IN THE ELEMENTARY SCHOOL.* Class 3, cr. 3.

Methods and materials for teaching reading in the elementary school.

ED 327. CORRECTIVE READING FOR THE CLASSROOM TEACHER.* Sem. 1 and 2. SS. Class 2, Lab. 3, cr. 3. Prerequisites: ED 285, 326, 385.

Classroom procedures for the identification of reading difficulties; selection and application of appropriate methods and materials to provide corrective treatment.

ED 385. CASE STUDIES OF ELEMENTARY SCHOOL CHILDREN.* Cr. 2. Prerequisite: ED 285, or consent of instructor.

Presents methods of collecting information about the behavior and development of elementary-age children and provides experience in using case studies in planning for individual children.

DUAL LEVEL

ED 500. HISTORY AND PHILOSOPHY OF EDUCATION. Class 3, cr. 3. Prerequisite: 12 hours in education.

Consideration of the major ideas, trends, and movements in the development of American education.

ED 523. INTRODUCTION TO MEASUREMENT AND EVALUATION. Class 2, Lab. 2, cr. 3.

An introduction to the basic concepts and principles of measurement and evaluating, including elementary statistics, principles of test construction, survey of standardized tests.

ED 530. ADVANCED EDUCATIONAL PSYCHOLOGY. Class 3, cr. 3. Prerequisites: PSY 120 and ED 285.

Theories of learning and development, research on instruction and learning, and principles of measurement applied to educational problems.

ED 570. AUDIO-VISUAL MEDIA. Cr. 3. Prerequisites: 12 hours of education and psychology.

Sources, selection, and effective use of audio-visual materials.

ED 571. PREPARATION OF INSTRUCTIONAL MATERIALS. Class 1, Lab. 4, cr. 3.

Design and preparation of a variety of instructional materials for use by instructional materials specialists, teachers, librarians, and A-V coordinators in educational situations. Laboratory practice is provided in production of these materials.

ED 580. MEDIA FOR CHILDREN. Class 3, cr. 3. Prerequisite: five hours of education and psychology.

Selection and use of library materials for children.

ED 581. MEDIA FOR YOUNG ADULTS. Sem. 1 and 2, and alternating SS. Class 3, cr. 3. Prerequisites: junior standing and three hours of educational psychology.

Evaluation, selection, and use in the broad subject fields of printed, filmed, and recorded materials for young adults, to meet personal and educational needs.

ED 591. EDUCATIONAL PROBLEMS OF TEACHERS. Cr. 1-4.

Primarily for experienced teachers desiring credit from special workshops or individual study. Topics of individual study will deal with problems which arise from the professional work of classroom teachers.

GRADUATE LEVEL

ED 627. SECONDARY SCHOOL CURRICULUM. Sem. 1, Cr. 2 or 3.

Objectives, organization, and administration of the secondary school curriculum.

ED 675. LANGUAGE ARTS IN THE ELEMENTARY SCHOOL. Class 3, cr. 3. Prerequisite: ED 320, its equivalent, or admission by consent of the instructor.

Research, recent trends, and current developments in the field of language arts and implications for classroom practice in the elementary school.

ED 676. READING IN THE ELEMENTARY SCHOOL. Class 3, cr. 3. Prerequisite: ED 376, its equivalent, or consent of instructor.

Research, recent trends, and current developments in the field of reading instruction. Emphasis will be on improving developmental reading in the elementary school programs rather than on surveying remedial programs.

ED 677. SOCIAL STUDIES IN THE ELEMENTARY SCHOOL. Class 3, cr. 3. Prerequisite: ED 322, its equivalent, or admission by consent of instructor.

Social studies-content and place in the modern elementary education curriculum. Materials, instruction techniques, evaluation procedures, and understanding the syntax of the structure of social studies.

ED 678. SCIENCE IN THE ELEMENTARY SCHOOL. SS. Sem. 1 and 2. Cr. 3. Prerequisite: ED 323, its equivalent, or admission by consent of instructor.

Analysis of historical developments and present trends in elementary school science education; the designing, implementation, and evaluation of science programs; the role of research in present and future developments.

ED 679. ELEMENTARY SCHOOL CURRICULUM. Class 3, cr. 3. Prerequisite: 12 hours in education and psychology.

Needs of children and society; modern programs; procedures for developing a curriculum, including ways to improve the present offerings of a school.

ED 682. INDIVIDUALIZED INSTRUCTION IN ELEMENTARY EDUCATION. Class 3, cr. 3. Prerequisite: 12 hours in education and psychology.

ENGLISH

Section Chairman: J. J. Pappas

Associate Professor: J. J. Pappas

Assistant Professors: B. M. Lootens, H. W. Phillips, R. C. Schlobin,
J. J. Stanfield.

UNDERGRADUATE LEVEL Lower-Division Courses

ENGL 100. ENGLISH COMPOSITION. Class 2, Lab. 3, cr. 3. Required of freshmen whose test scores indicate a need for directed practice in the patterns of English prose and a review of fundamentals in English. After successful completion of ENGL 100 students are assigned to ENGL 104.

Emphasis on the organization of expository paragraphs and the expository theme. Directed writing and revising of themes based on personal experience, the relationship between experience and language, and the relationship between experience and ideas.

ENGL 104. ENGLISH COMPOSITION I. Class 3, cr. 3. (Freshmen). Prerequisite for all courses in English except ENGL 185, 285, and 286.

Emphasis on expository writing skills,

organization of written thought, in both home-prepared themes and in-class exercises. Basic research techniques taught and major research report submitted by students. Reading in literary anthology for purposes of writing and discussion.

ENGL 105. ENGLISH COMPOSITION II. Class 3, cr. 3. Prerequisite: ENGL 104 or by virtue of SAT.

The second half of the basic composition sequence. Emphasis on the logical and rhetorical problems involved in writing. Research paper required.

ENGL 185. DEVELOPMENTAL READING. Lab. 2, cr. 1.

Purpose: to increase reading efficiency by improving comprehension and by developing the motor skills involved in reading speed. Stimulates reading interest through use of films and pacers.

ENGL 201. THE NATURE OF LITERARY STUDY. Class 3, cr. 3.

A study of literary concepts and critical procedures as applied to representative

poetry, fiction, and drama, with practice in critical writing. Required of English majors. May substitute for ENGL 105 if student received an A in ENGL 104.

ENGL 230. INTRODUCTION TO LITERATURE. Class 3, cr. 3. Not open to students with credit for ENGL 238.

Reading and discussion of major works in English, American, and continental literature to develop an understanding of style, form, and ideas characteristic of great works. Emphasis on types of narrative literature.

ENGL 231. INTRODUCTION TO LITERATURE. Class 3, cr. 3.

Reading and discussion of major works in English, American, and continental literature to develop an understanding of style, form, and ideas characteristic of great works. Emphasis on various types of literature.

ENGL 235. INTRODUCTION TO THE DRAMA. Class 3, cr. 3.

Reading and discussion of a number of plays, most of them modern, aimed at an appreciation of the drama as literature and as entertainment.

ENGL 237. INTRODUCTION TO POETRY. Class 3, cr. 3.

How to read poetry intelligently; function of diction, metrics, figures of speech, and theme; place of a poem in history, uses of poetry, etc.

ENGL 238. INTRODUCTION TO FICTION. Class 3, cr. 3. Not open to students with credit for ENGL 230.

Reading and discussion of selected short stories and six novels to promote awareness, understanding, and appreciation of the range, values, techniques, and meanings of modern fiction.

ENGL 240. INTRODUCTION TO THE LITERATURE OF ENGLAND: FROM THE BEGINNINGS TO SWIFT AND POPE. Class 3, cr. 3.

A survey with emphasis on the study of selected texts from the major writers, this course aims at both competence in literary analysis and awareness of the relation between each writer and his times.

ENGL 241. INTRODUCTION TO THE LITERATURE OF ENGLAND: FROM THE RISE OF ROMANTICISM TO THE TWENTIETH CENTURY. Class 3, cr. 3.

A continuation of ENGL 240, this course carries the same study from the mid-eighteenth to the twentieth century.

ENGL 250. GREAT AMERICAN BOOKS. Class 3, cr. 3.

Seven books read and discussed as to their literary qualities and their cultural significance in American literary history.

ENGL 262. GREEK AND ROMAN CLASSICS IN TRANSLATION. Class 3, cr. 3.

Study of important works of Greek and Roman literature, their intrinsic literary values, and their influence on later European and American writing and thinking.

ENGL 264. THE BIBLE AS LITERATURE. Class 3, cr. 3. Prerequisite: ENGL 104.

A study of selected passages from the Old and New Testaments in the King James Version of the Bible meant to acquaint the student with Hebrew poetry and prose, narrative technique, treatment of myth, history, psalm, short story, and apocalypse. Study of selected modern works based upon Biblical stories. Fulfills requirement for English majors.

ENGL 266. WORLD LITERATURE: ANCIENT, MEDIEVAL, AND RENAISSANCE PERIODS. Class 3, cr. 3.

To familiarize the student with the major works of world literature (British, French, German, Icelandic, Eastern, Scandinavian, etc.) and the relationships between them. Adequate background knowledge of culture and society is supplied as is necessary to appreciate the literature. Fulfills English major requirement.

ENGL 267. WORLD LITERATURE: EIGHTEENTH, NINETEENTH, AND TWENTIETH CENTURIES. Class 3, cr. 3.

Western world literature in translations and in English originals from about 1700 to the present; the changes and growth in our cultural heritage, as reflected primarily in French, English, German, and Russian imaginative writing.

ENGL 285. CRITICAL READING. Class 2, cr. 2. Prerequisite: ENGL 185 or consent of instructor.

Close reading of selected current magazines and newspapers, emphasizing efficient techniques for finding general meaning. Includes the application of elementary logical and semantic analysis.

ENGL 286. VOCABULARY BUILDING. Lab. 2, cr. 1.

Development of vocabulary through study of the characteristics of the language, usage, and word formation; exercises and dictionary practice; selected readings.

UNDERGRADUATE LEVEL Upper-Division Courses

ENGL 304. ADVANCED COMPOSITION. Class 3, cr. 3.

Designed for students who wish additional training in composition beyond the basic requirements. Extensive practice in the writing of mature expository, critical, and argumentative prose. (The course satisfies the Indiana certification requirement of three hours of advanced composition.)

ENGL 333. RENAISSANCE ENGLISH LITERATURE. Class 3, cr. 3. Prerequisite: ENGL 104, 105.

Study of the poetry, prose, and drama (exclusive of Shakespeare) of major Renaissance and seventeenth-century writers. Emphasis upon the use of literary conventions, forms, and themes in Renaissance writing, including works by Spenser, Sidney, Jonson, Donne, Herbert, and others. Fulfills requirement for English major.

ENGL 350. AMERICAN WRITERS FROM 1800 TO 1865. Class 3, cr. 3. Not open to students who have credit for ENGL 250.

Reading and discussion of selections from major American essayists, novelists, poets, with emphasis on Romantic and Transcendentalist movements in America. Representative figures studied, such as Irving, Cooper, Bryant, Hawthorne, Emerson, Poe, Thoreau, Melville and Whitman. Fulfills English major requirement.

ENGL 351. AMERICAN WRITERS FROM 1865 TO 1910. Class 3, cr. 3. Not open to students who have credit for ENGL 250.

Emphasis on rise of realism and disappearance of Romantic movement in

America. Representative authors studied—Twain, Garland, Norris, James, Dreiser, Crane, Dickinson, Robinson, Howells—along with background of rising industrialism and growth of urban society. Fulfills English major requirement.

ENGL 372. INTRODUCTION TO AMERICAN FOLKLORE. Class 3, cr. 3.

A study of traditional beliefs, literature, exaggerations, and knowledge or skills orally conceived or transmitted from one generation to the next—proverbs, riddles, rhymes, naming and place names, myths and legends, folk tales, songs, architecture, foods, handicrafts, burial practices, etc. Some emphasis upon Indiana folklore.

ENGL 375. MAJOR BRITISH DRAMATISTS TO 1800, EXCLUSIVE OF SHAKESPEARE. Prerequisites: ENGL 104, 105. Class 3, cr. 3.

British drama from its medieval beginnings, through the Elizabethan, Jacobean, Caroline, Restoration, and late eighteenth-century periods. Representative plays from each period to be studied and discussed. Fulfills English major requirement.

ENGL 376. THE MOVIES. Class 2, Lab. 3, cr. 3.

History of the movies, primarily American, from *Birth of A Nation* and *The Great Train Robbery* to contemporary films. Emphasis on "firsts," innovative films, first original script, first musical, first conversion from stage to cinema, etc. Screening of films once a week; lecture and discussion other class periods.

ENGL 377. MAJOR MODERN POETRY. Class 3, cr. 3.

The development of new trends in and the interrelationships among the poetry of Ireland, Britain, and the United States. Poets central to modernism, such as Yeats, Pound, Eliot, Williams, and Stevens will be emphasized, though more recent poets will also be read. Fulfills requirement for English majors.

ENGL 381. THE BRITISH NOVEL. Class 3, cr. 3.

Studies in the historical development of the British novel, with reading and discussion of representative works of the eighteenth and nineteenth centuries. Fulfills requirement for English majors.

ENGL 382. THE AMERICAN NOVEL. Class 3, cr. 3.

Reading and discussion of representative American novels from Hawthorne to Ellison, emphasizing major trends in purpose, content, and technique. Supplementary lectures on background materials.

ENGL 405. CREATIVE WRITING. Class 3, cr. 3. (May be repeated for credit.)

Informally conducted for students who enjoy writing—of any kind except the narrowly technical—and concerned with problems of form, style, diction, sentence structure. Workshop criticism.

ENGL 442. SIX PLAYS BY SHAKESPEARE. Class 3, cr. 3.

Shakespeare's dramatic craftsmanship, poetry, humor, characterization, psychology, and modern pertinence illustrated in representative tragedies, comedies, and history plays.

ENGL 444. MILTON'S MAJOR POETRY. Prerequisites: ENGL 104; two lower-division English courses recommended. Class 3, cr. 3.

A study of the life, prose and poetry of John Milton with major emphasis upon the use of form and convention in the poetry. The student will become acquainted with Milton's use of the sonnet, masque, hymn, epic, brief epic and tragedy. Fulfills requirement for English.

ENGL 455. MAIN CURRENTS OF AMERICAN THOUGHT. Class 3, cr. 3.

A survey of dominant ideas and intellectual trends in America from 1607 to the present as revealed through American literature and as related to American life and culture.

ENGL 456. AMERICAN HUMOR. Class 3, cr. 3.

Humorous writings of the nineteenth and twentieth century are studied as to form and technique and also as a reflection of American life. Special emphasis on Mark Twain.

ENGL 457. LITERATURE OF BLACK AMERICA. Class 3, cr. 3.

A survey of American novelists who have commented on or interpreted the Black experience in historical or contemporary society.

ENGL 479. THE SHORT STORY. Class 3, cr. 3.

A historical and critical study of nineteenth and twentieth-century short

stories—Irish, British, American, and continental.

ENGL 493. DIRECTED READING. Cr. 1-3. Admission by consent of instructor. (May be repeated for credit.)

Directs the reading of students with special interests. Guides students in profitable reading in subjects of their own choice. Individual conferences only—no class meetings.

DUAL LEVEL

Undergraduate-Graduate

(General prerequisite for all English literature courses numbered above 500: six hours of composition and six hours of literature, or permission of the instructor.)

ENGL 533. TUDOR LITERATURE. Class 3, cr. 3.

Nondramatic literature of the English Renaissance up to 1603, particularly Elizabethan. Representative selections in both prose and verse are studied, with special attention to Spenser, Sidney, and Shakespeare.

ENGL 535. RESTORATION AND EARLY EIGHTEENTH-CENTURY LITERATURE. Class 3, cr. 3.

A survey of the nondramatic literature from 1660 to 1744, from Clarendon through Thomson. Emphasizes Bunyan, Dryden, Pope, and Swift.

ENGL 541. CHAUCER. Class 3, cr. 3.

Intensive study of the development of Chaucer's literary work with consideration of his language, his sources, and various critical approaches to his poetry.

ENGL 547. THE ROMANTIC MOVEMENT ENGLISH LITERATURE. Class 3, cr. 3.

Principal writers of the Romantic Movement (Burns to Keats), emphasizing Wordsworth: relation of the historical background to the thought and feeling of the writers concerned.

ENGL 548. VICTORIAN LITERATURE. Class 3, cr. 3.

A survey of English poetry and prose from about 1832 to about 1880.

ENGL 558. THE RISE OF REALISM IN AMERICAN LITERATURE. Class 3, cr. 3.

A survey of American literature from about 1855 to 1900, beginning with Whit-

man and ending with James and the early naturalists.

ENGL 575. MODERN AMERICAN DRAMA. Class 3, cr. 3.

Representative plays by major American playwrights from 1920 to the present.

ENGL 580. LITERATURE AND MODERN THOUGHT. Class 3, cr. 3.

Readings in literature, philosophy, and social criticism, concentrated on the political, industrial, and scientific revolutions that have molded modern life and thought.

ENGL 590. DIRECTED WRITING. Cr. 1 to 3. Prerequisite: Consent of the instructor. (May be repeated for credit.)

Writing—Creative, popularly technical, biographical, historical, philosophical—on subjects of the student's choice. Individual conferences only. No class meetings.

ENGL 595. CONTEMPORARY AMERICAN FICTION. Class 3, cr. 3.

Study of fiction of the past two or three decades as it relates to American literary traditions and thought. Survey of scholarship and criticism. Examinations and critical papers.

ENGL 693. DIRECTED READING. Cr. 1-3. Admission by consent of instructor.

Directs the reading of students with special interests. Guides students in profitable reading in subjects of their own choice. Individual conferences—no class meetings. May be repeated for credit.

HISTORY

Professor: H. Jablon.

HIST 103. INTRODUCTION TO WESTERN CIVILIZATION: THE MEDIEVAL WORLD. Class 3, cr. 3.

A survey of European history from the disintegration of the western Roman Empire through the age of expansion and discovery in the sixteenth century. Major emphasis is placed on those institutions and habits of thought peculiar to western Europe, in the medieval era including feudal relations, Benedictine monasticism, the Papacy, the German Empire, and scholastic theology. Relevant contemporary developments in the Byzantine and Islamic worlds, however, are also studied. Designed to meet the needs of the beginning student in European history.

HIST 104. INTRODUCTION TO WESTERN CIVILIZATION: THE MODERN WORLD. Class 3, cr. 3.

Traces the expansion of Europe into the Americas, Africa, and Asia. The French Revolution, nationalism, and the development of Western European states from the era of the Reformation to the present are studied.

HIST 151. AMERICAN HISTORY TO 1877. Class 3, cr. 3.

A study of the development of American political, economic, and social institutions from the early explorations and colonial settlements through Reconstruction.

HIST 152. UNITED STATES SINCE 1877. Class 3, cr. 3.

A study of the growth of the United States from 1877 to the present. The new industrialism, agrarian problems, depression, the New Deal, the two world wars, the cold war, and similar topics are analyzed.

HIST 334. SCIENCE AND TECHNOLOGY IN WESTERN CIVILIZATION II. Class 3, cr. 3.

A survey of some of the main features of the historical development of science and technology in the western world from Newton to the present. Emphasis is placed upon the relation between the achievements of individual investigators and the major aspects of the society and culture in which they lived.

HIST 367. TWENTIETH-CENTURY AMERICAN HISTORY. Class 3, cr. 3.

A survey of twentieth-century American history, covering major political and economic developments and related intellectual movements. A parallel consideration of foreign affairs traces the emergence of America as a world power and the effects of her new status on the Western Hemisphere, Europe, and Asia.

HIST 386. HISTORY OF AMERICAN FOREIGN RELATIONS. Class 3, cr. 3.

The history of American foreign relations from the late colonial period to the present. The elements of continuity in the concerns and goals of United States policy are traced as background for an examination of the new issues and alternative responses that present themselves after great-power status and obligations develop in the twentieth century.

HIST 396. THE AFRO-AMERICAN TO 1865. Class 3, cr. 3.

The history of Afro-Americans in America from their African origins to 1865. Emphasis is focused upon early African society, American slavery, and the development of black institutions and culture in the United States.

HIST 398. THE AFRO-AMERICAN SINCE 1865. Class 3, cr. 3.

The history of Afro-Americans from 1865 to the present. Their struggles to overcome social, economic, and political oppression and to win basic civil and human rights while making valuable contributions to American society are emphasized.

HIST 466. INDUSTRIALISM AND THE PROGRESSIVE ERA, 1877 TO 1914. Class 3, cr. 3. Prerequisite: HIST 152.

A survey of late nineteenth- and early twentieth-century American history covering

the industrial and corporate development, the Spanish-American War and the resulting imperialism; and the growth of governmental regulation and control.

HIST 467. RECENT AMERICAN HISTORY. Class 3, cr. 3. Prerequisites: HIST 151 and 152.

A study of twentieth-century American history into the depression thirties. Domestic political and social developments will be traced from 1914 to 1939, while diplomatic and military events will be covered from the early twentieth century to 1933. Particular attention will thus be given to the First World War and the Great Depression.

HIST 493. INTERDISCIPLINARY UNDERGRADUATE SEMINAR.

Class 1-3, cr. 1-3. (Same as PHIL 493, POL 493, PSY 493, SOC 493, and THTR 493). (May be repeated for credit.)

An undergraduate seminar devoted to an interdisciplinary examination of social, economic, political, and intellectual movements, using the faculty resources of the participating departments. Subject matter will vary. Each offering of the seminar will be approved by a committee of department heads from the sponsoring departments.

MODERN LANGUAGES

Assistant Professors: R. Danald, H. Sokolowski.

French

FR 101. FIRST COURSE IN FRENCH. Class 3, Lab 1, cr. 3.

Introduction to the structure of the language. A certain amount of basic grammatical rules and idiomatic constructions is covered, with illustrations of their application thru simple, graduated text-book readings. Each lesson concentrates on specific rules and constructions with the objective of understanding through reading. Main objective: supplying the students with tools (grammar, idioms) to enable him to

handle the language in the future.

FR 102. SECOND COURSE IN FRENCH. Class 3, Lab. 1, cr. 3. Prerequisite: FR 101.

Continuation of FR 101. Completion of study of basic grammar, proceeding in the same manner as FR 101. Reading with understanding still the main objective, based on knowledge and recognition of grammar and idiomatic constructions.

FR 203. THIRD COURSE IN FRENCH. Class 3, cr. 3. Prerequisite: FR 102.

Application of knowledge of grammar and idiomatic constructions to reading with understanding of simple, graduated texts. Progressive building of vocabulary with concise reviews of grammar when necessary. First attempts at writing and impromptu speaking.

FR 204. FOURTH COURSE IN FRENCH. Class 3, cr. 3. Prerequisite: FR 203.

Continuation of graduated readings with the objective of enlarging vocabulary and ability to construct sentences. Occasional grammatical review, when necessary. First attempts at composition and conversation.

Introduction of the idea of "thinking in French".

German

GER. 101. FIRST COURSE IN GERMAN. Class 3, Lab. 1, cr. 3.

The objectives of this course are to teach the student the pronunciation of German sounds, to introduce him to the basic grammar and structure of the language (which is completed in 102), and to acquaint him with the meaning and use of certain common words and phrases (approx. 500).

There is also emphasis upon the spoken language. This is done primarily in the language laboratory (about 1½ hours per week), where the student listens to tapes and either repeats the sentences which he hears or forms variations of them.

GER. 102. SECOND COURSE IN GERMAN. Class 3, Lab. 1, cr. 3. Prerequisite: GER. 101.

Course is a continuation of GER. 101. It completes the study of the basic grammar and increases the students vocabulary. Main objectives are reading and the acquisition of simple conversation-type sentences.

GER. 203. THIRD COURSE IN GERMAN. Class 3, cr. 3. Prerequisite: GER. 102.

The primary objective is to increase the students ability to read German. Some emphasis is also given to the spoken language. There is no grammatical study as such. Students read short stories which are in part translated in class and then discussed as much as possible in German. This usually takes the form of questions and answers about the content. There is also some reading which is done completely outside of class.

GER. 204. FOURTH COURSE IN GERMAN. Class 3, cr. 3. Prerequisite: GER. 203.

This course is similar to 203. Its goal is to increase further the students facility in

reading German and in the use of the language. Readings consist of short stories, a play, and some non-fictional material dealing with certain aspects of German history, culture, or politics. There is also outside reading.

Russian

RUSS 101. FIRST COURSE IN STANDARD RUSSIAN. Class 3, Lab. 1, cr. 3. For beginners only.

Unless recommended by the head of the school in which the student is registered, a student may not apply toward graduation the credit for RUSS 101 without satisfactorily completing a more advanced course in Russian.

RUSS 102. SECOND COURSE IN STANDARD RUSSIAN. Class 3, Lab. 1, cr. 3. Prerequisite: RUSS 101.

Continuation of RUSS 101.

Spanish

SPAN 101. FIRST COURSE IN SPANISH. Class 3, Lab. 1, cr. 3.

Introduction to the basic structure and use of Spanish. Stress is laid on cognates, idioms and similarities with English to make the student aware of how meaning is achieved in language and to improve his use of his own language, recognizing that language is a social convention. Minimum objective is understanding parts of speech and how they function.

SPAN 102. SECOND COURSE IN SPANISH. Class 3, Lab. 1, cr. 3. (Prerequisite: SPAN 101.)

Completes the introduction to the basic grammar of Spanish with increased sophistication of insights into and idiomatic uses of language in general and the importance of precise use of language. Some cultural material is introduced. Emphasis on cognates and Spanish derivatives increase the student's vocabulary in English as well as Spanish. Minimum objectives are general knowledge of basic structure of Spanish and a degree of ease in reading and speaking.

SPAN 203. THIRD COURSE IN SPANISH. Class 3, cr. 3. (Prerequisite: SPAN 102.)

Emphasizes reading with the objective of teaching the student to read and understand vs. laboriously translating with the use of a dictionary. Short stories and a novellette or drama comprise the texts which provide strong motivation of interest and enjoyment. The beginnings of literary insights are developed as comprehension skill increases. Works of well known, largely contemporary

authors are used. Emphasis on reading for enjoyment and practicality. Minimum objective is ability to read simple Spanish of an adult content.

SPAN 204. FOURTH COURSE IN SPANISH. Class 3, cr. 3. (Prerequisite: SPAN 203.)

Fulfills last semester of language requirement and prepares for further study of Spanish. Emphasis on Iberian and Hispanic culture: history, art, literature, and music and Spain's outstanding contribution to belles lettres and to history through such figures as Don Quixote, Don Juan and Picasso. Basic objectives are ability to comprehend adult literature and know high points of Spanish cultural history. An excellent general cultural course with a uniformly high level of interesting material. Introduces student to folklore and to a general appreciation of the arts. Text is supplemented with a variety of illustrative material in lectures with examples of art, music and literature.

PHILOSOPHY

PHIL 110. INTRODUCTION TO PHILOSOPHY. Class 3, cr. 3.

The basic problems and types of philosophy with special emphasis upon the problems of knowledge and nature of reality.

PHIL 111. ETHICS. Class 3, cr. 3.

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the

good life and standards of right conduct; the regulation of non-moral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn both from contemporary sources and from the works of such philosophers as Plato, Aristotle, Aquinas, Butler, Hume, Kant, and J. S. Mill.

POLITICAL SCIENCE

Associate Professor: A. O. Bowser.

POL 101. AMERICAN GOVERNMENT AND POLITICS. Class 3, cr. 3.

A study of the nature of democratic government, the U.S. Constitution, federalism, civil rights, political dynamics, the presidency, Congress, and the judiciary.

POL 141. INTRODUCTION TO COMPARATIVE POLITICS. Class 3, cr. 3.

Introductory survey of major European governments, including mainly Great Britain, France, Germany, and the Soviet Un-

ion, with special attention to historical, cultural, and constitutional developments, the organization and ideologies of political parties, and current political problems.

POL 230. INTRODUCTION TO INTERNATIONAL RELATIONS. Class 3, cr. 3.

Introductory survey of the underlying forces in international relations, the foreign policies of the great powers, and agencies of control and cooperation.

POL 350. INTRODUCTION TO POLITICAL THEORY: THEORY AND CONCEPTS. Class 3, cr. 3.

An analysis of the most important concepts found in the writings of outstanding political theorists from the time of the Greeks through the end of the Middle Ages with attention paid to writings of the Reformation period. An examination of two systems of political thought in the western political tradition: the Classical and the Christian. The ideas of the theorists are studied in the light of the society and institutions of their time.

POL 370. INTRODUCTION TO COMPARATIVE STATE POLITICS. Class 3, cr. 3.

An introduction to the structure and process of state government, including the legal and political relationships between the state and local units of government.

POL 429. CONTEMPORARY POLITICAL PROBLEMS. Class 3, cr. 3. Prerequisite: POL 101 or 301. (Formerly POL 529.)

Contemporary political problems in the United States affecting the interpretation of democracy, human rights and welfare, social pressures, intergovernmental relations.

POL 510. POLITICAL PARTIES AND POLITICS. Class 3, cr. 3.

A study of political leadership, pressure groups, political parties, nominating processes, campaign strategies, voting behavior, and money in elections.

POL 560. CONSTITUTIONAL LAW. Class 3, cr. 3. Prerequisite: POL 101.

A survey of selected areas of constitutional law, considering the political and social influences as well as the doctrinal forces which have produced these policies.

PSYCHOLOGICAL SCIENCES

Associate Professor: J. W. Gaines.

PSY 120. ELEMENTARY PSYCHOLOGY. Class 3, cr. 3.

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, attention, perception, learning, memory, and thinking.

PSY 235. CHILD PSYCHOLOGY. Class 3, cr. 3. Prerequisite: PSY 120 or equivalent.

General principles of children's behavior and development, from conception to adolescence, including sensory and motor development, and basic psychological processes such as learning, motivation and socialization.

PSY 303. EXPERIMENTAL PSYCHOLOGY. Sem. 1 and 2. Class 2, Lab. 2, cr. 3. Prerequisite: PSY 301 or equivalent.

The lecture portion of this course covers methodology and the philosophy of science, while the laboratory experience covers different techniques in several areas of experimental psychology.

PSY 310. SENSORY AND PERCEPTUAL PROCESSES. Class 3, cr. 3. Prerequisite: six hours of psychology.

Theory, problems, and research in sensation and perception, including physiological bases and measurement techniques.

PSY 311. HUMAN LEARNING AND MEMORY. Sem. 1 and 2. Class 3, cr. 3. Prerequisite: PSY 301 or consent of instructor.

Theory and research in verbal learning, attention, discrimination learning, thinking, conceptual and organization processes, memory and languages.

PSY 340. GENERAL SOCIAL PSYCHOLOGY. Sem. 1 and 2. SS. Class 3, cr. 3. (Not open to students with credit for SOC 340.) Prerequisite: three hours of psychology or of sociology.

Conditions and consequences of human behavior in social situations, with emphasis upon the mechanism and the processes on the basis of which socialization takes place.

PSY 350. ABNORMAL PSYCHOLOGY. Class 3, cr. 3. Prerequisite: three hours of psychology.

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

PSY 423. PSYCHOLOGY OF PERSONALITY. Class 3, cr. 3. Prerequisite: three hours of psychology.

The development, structure, and functioning of the normal personality.

PSY 500. STATISTICAL METHODS APPLIED TO PSYCHOLOGY, EDUCATION, AND SOCIOLOGY. Class 3, cr. 3.

Descriptive statistics and an introduction to sampling statistics. Application to psychological, sociological, and educational data.

PSY 548. GROUP HUMAN RELATIONS. Class 3, cr. 3. Prerequisite: 6 hours of psychology.

A concrete introduction to the psychology of personality, the structure and dynamics of small groups, and the formation of development of group cultures. Members constitute themselves into a self-analytic group which analyzes its own processes in relation to the personalities and roles of its members.

SOCIOLOGY AND ANTHROPOLOGY

ANTH 105. AN INTRODUCTION TO CULTURAL ANTHROPOLOGY. Class 3, cr. 3.

An introduction to the science of man and his works. Emphasis on the nature of culture and culture change; relationship of culture and personality. Attention given to the variations with the "universal" institutions of man: language, technology, the family, systems of social control, economics, warfare, religion, art, and values. Processes of invention, diffusion and acculturation; theoretical interpretations of the direction and process of cultural development.

SOC 100. INTRODUCTORY SOCIOLOGY. Class 3, cr. 3. May not be taken for credit by students of junior or senior standing.

A survey course designed to introduce the student to the science of human society. Fundamental concepts, description and analysis of society, culture, the socialization process, social institutions, and social change.

SOC 220. SOCIAL PROBLEMS. Class 3, cr. 3. Prerequisite: SOC 100 or 312, or equivalent.

Analysis of problem conditions in modern society-family disorganization, racial conflicts, class struggle, mental illness, narcotic addiction, gambling, alcoholism, and others. Social factors involved in the development, continued existence, and amelioration of these conditions.

SOC 312. AMERICAN SOCIETY. Class 3, cr. 3. Students with freshman standing (or who have had SOC 100) may not enroll in this course without special permission.

An introduction to sociological perspective. Detailed consideration of the fundamental structure, social changes, and related problems of the major American institutions: family, economic order, political organization, education, and religion.

SOC 340. GENERAL SOCIAL PSYCHOLOGY. Class 3, cr. 3. (Not open to students with credit for PSY 340.) Prerequisite: three hours of psychology or of sociology.

Conditions and consequences of human behavior in social situations, emphasis upon the mechanism and the processes on the basis of which socialization takes place.

SOC 350. SOCIAL PSYCHOLOGY OF MARRIAGE. Class 3, cr. 3. (Not open to students who have had CDFL 350.)

Designed to provide an understanding of contemporary courtship, marriage, and family interaction as cultural, social, and social-psychological phenomena. Consideration of the major sources of marital strain and conflict within a heterogeneous, rapidly changing society.

SOC 383. INTRODUCTION TO METHODS OF SOCIAL RESEARCH. Class 3, cr. 3. Prerequisite: six hours of sociology. (Formerly SOC 480.)

Introduction to the methods of data collection and analysis and to the use of the scientific method in social research.

Formulation of hypotheses and research designs for their testing. Elementary principles for the conduct of experiments, observation and interviewing, documentation,

content analysis, and surveys. Relationship between social research and social theory.

SOC 422. CRIMINOLOGY. Class 3, cr. 3. Prerequisite: SOC 100, 312, or equivalent.

Nature and cause of crime; methods of dealing with adult and juvenile offenders; consideration of present programs for the social treatment of crime in the light of needed changes.

School of Management

Dean J. S. Day in Charge, West Lafayette

ECONOMICS

Assistant Professor: R. A. Martin.

ECON 210. PRINCIPLES OF ECONOMICS.* Class 3, cr. 3.

Study of the basic economic institutions, such as business, labor organizations, banks, and government. Analysis of the effects of competition, monopoly, and government on allocation of resources in production and consumption; factors affecting size and growth of national income.

ECON 251. MICROECONOMICS. Class 3, cr. 3. Prerequisite: ECON 210.

Price theory and resource allocation. Emphasis is on developing a detailed understanding of the principles of microeconomics and analysis and their application to understanding price and market behavior.

ECON 252. MACROFINANCE. Class 3, cr. 3. Prerequisite: ECON 251.

Financial behavior of households, non-financial businesses, commercial banks and other financial institutions. The determination of interest rates and financial flows. The effect of these on economic activity and the special role of Federal Reserve.

ECON 513. ECONOMIC THEORY. Class 3, cr. 3.

Theoretical analysis of a market economy with an emphasis on decision processes of managers. Consideration is given to microaspects of price determination, utilization of resources and market organization, and aggregative concepts of national income and employment.

ECON 553. LABOR LAW I. This course has been replaced by MGMT 553.

ECON 554. LABOR LAW II. This course has been replaced by MGMT 636.

ECON 585. THE UNITED STATES AND THE WORLD ECONOMY IN RECENT TIMES. Class 3, cr. 3. Limited to students in the Master of Arts in Teaching (Economics) Program.

Economic history of the United States with primary emphasis upon topics related to economic growth and development in the nineteenth and twentieth centuries.

*Several economics courses generally cover the same material although they differ in detail in order to serve the need of the several schools. ECON 210, 216, and 219 are oriented toward macroeconomics while ECON 212 and 215 are more concerned with microeconomics. Credit will be given for only one of ECON 210, 216, and 219 as well as only one of ECON 212 and 215.

MANAGEMENT

MGMT 100. MANAGEMENT LECTURES. Class 1, cr. 1.

An introduction and survey of the field of industrial management.

MGMT 200. INTRODUCTORY ACCOUNTING. Class 3, cr. 3 or Class 2, Lab. 2, cr. 3.

Introduction to the fundamentals of accounting.

MGMT 201. COST ACCOUNTING. Class 3, cr. 3. Prerequisite: MGMT 200 or equivalent.

Nature of cost accounting; job order, process, and standard cost methods. Preparation and uses of various types of cost reports.

MGMT 300. FINANCIAL ACCOUNTING I. Class 3, cr. 3. Prerequisite: MGMT 201.

Intermediate level accounting. Financial reporting to management, investors, and interested external parties. Emphasis on wealth and income measurement and rule formulation in contemporary problem areas.

MGMT 310. FINANCIAL MANAGEMENT. Class 3, cr. 3. Prerequisite: MGMT 201 or 202.

Management of the financial affairs of the industrial enterprise from the viewpoints of its financial officer.

MGMT 320. MARKETING MANAGEMENT. Class 3, cr. 3. Prerequisite: MGMT 201 or equivalent.

A managerial approach to marketing decisions. Emphasis on problems related to product policy, distribution channels, pricing, personal selling, advertising, and marketing research.

MGMT 457. LEGAL FOUNDATIONS IN BUSINESS. Class 3, cr. 3. (Formerly ECON 472.) Prerequisite: senior standing in industrial management or consent of department.

Nature of our legal system and its significance for management. Social and moral basis of law, nature and enforcement of legal liability. Cases dealing with contracts, torts, negotiable instruments, and related topics.

MGMT 553. LABOR LAW I. Class 3, cr. 3. Prerequisite: MGMT 430 or consent of instructor. (Formerly ECON 553.)

A study of the common law and statutory law affecting union-management relations, with emphasis on current labor legislation including such areas as the National Labor Relations Act and amendments, the Railway Labor Act, wage and hour legislation, workmen's compensation, and social security laws.

MGMT 554. LABOR LAW II. (This course has been replaced by MGMT 636).

MGMT 600. FINANCIAL CONTROL I. Class 2, Lab. 2, cr. 3.

For students in the graduate management program or by consent of the school. Basic concepts of accounting and their use in management.

MGMT 601. FINANCIAL CONTROL II. Cr. 3. For students in the graduate management program or by consent of the school.

Continuation of Financial Control I. An intensive study of the use of cost and financial figures as a tool in planning and controlling business operations.

MGMT 631. THE PERSONNEL FUNCTION. Class 3, cr. 3. For graduate students only except by permission of instructor.

Study of the administration of the industrial relations function in the business firm. Role of line and staff in manpower and management.

School of Pharmacy and Pharmacal Sciences

Dean V.E. Tyler in Charge, West Lafayette

PCOL 201. INTRODUCTORY PHARMACOLOGY. Class 3, cr. 3.

An introduction to the pharmacological basis of therapeutics.

School of Science

Dean A. Clark in Charge, West Lafayette

BIOLOGICAL SCIENCES

Professor: C. L. Porter

Associate Professors: G. T. Asteriadis, M. W. Woodard.

Assistant Professor: J. M. Connor

BIOL 103. PRINCIPLES OF BIOLOGY.

Sem. 1, Class 2, Lab. 2, cr. 3.

The nature of the living state, and experimental approaches in studying it.

BIOL 104. PRINCIPLES OF BIOLOGY.

Sem. 2, Class 2, Lab. 2, cr. 3.

Continuation of BIOL 103.

BIOL 108. BIOLOGY OF PLANTS. Cr. 1-4.

Introduction to the growth, functioning, structures, heredity, diversity of plants, and their interactions with the environment.

BIOL 109. BIOLOGY OF ANIMALS. Cr. 1-4.

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment.

BIOL 203. BIOLOGY OF MAN. Sem. 1, Class 2, Lab. 2, cr. 3.

Introduction to human biology with emphasis on anatomy and physiology.

BIOL 204. BIOLOGY OF MAN. Sem. 2, Class 2, Lab. 2, cr. 3.

Continuation of BIOL 203.

BIOL 205. BIOLOGY FOR ELEMENTARY SCHOOL TEACHERS. Sem. 1, Class 2, Lab. 2, cr. 3.

Unifying concepts of biology taught with materials appropriate for future elementary school teachers.

BIOL 206. BIOLOGY FOR ELEMENTARY SCHOOL TEACHERS. Sem. 2, Class 2, Lab. 2, cr. 3.

Continuation of BIOL 205.

BIOL 211. THE SOCIAL IMPACT OF THE BIOLOGICAL SCIENCES. Sem. 1, Class 2, Lab. 2, cr. 3.

An introduction to basic concepts, experimentation, and information found within the biological sciences. Emphasis is placed upon the role of biology within the social framework. Relationships between this dis-

cipline and common social problems are explored.

BIOL 212. THE SOCIAL IMPACT OF THE BIOLOGICAL SCIENCES. Sem. 2, Class 2, Lab. 2, cr. 3.

A continuation of BIOL 211.

BIOL 220. INTRODUCTION TO MICROBIOLOGY. Sem. 2, Class 2, Lab. 2, Rec. 1, cr. 3. Prerequisites: one year of general chemistry and one semester of a life science.

The isolation, growth, structure, functioning, heredity, identification, classification, and ecology of microorganisms, their role in nature and significance to man.

BIOL 221. INTRODUCTION TO MICROBIOLOGY. Sem. 2, Class 2, Lab. 2, Rec. 1, cr. 4. Prerequisites: one year of general chemistry and one semester of a life science.

The isolation, growth, structure, functioning, heredity, identification, classification, and ecology of microorganisms, their role in nature and significance to man.

BIOL 260. STRUCTURAL BIOLOGY. Sem. 2, Class 2, cr. 2. Prerequisites: BIOL 103 and 104 or 108 and 109 or equivalent; prerequisite or corequisite: BIOL 261.

A description of biological structure at diverse levels of organization from molecules to multi-cellular organisms with emphasis on the relationship of structure and function.

BIOL 261. LABORATORY IN STRUCTURAL BIOLOGY. Sem. 2, Lab. 4, cr. 2. Prerequisites: BIOL 103 and 104 or 108 and 109 or equivalent.

Structure of plants and animals with emphasis on comparative, phylogenetic, and functional relationships.

BIOL 285. ENVIRONMENTAL BIOLOGY. Sem. 1, Lect. 2, Lab. 3, cr. 3. Prerequisites: a year of life science and a year of general chemistry.

Interactions of the biotic and abiotic components of natural environments. Ecological principles and phenomena associated with populations, communities, and ecosystems. Natural selection and other aspects of evolution. Principles of conservation.

BIOL 295. SPECIAL ASSIGNMENTS. Sem. 1 and 2, cr. variable.

Reading, discussions, written reports or laboratory work selected for enrichment in special areas of the biological sciences. Consent of instructor required. May be repeated for credit.

BIOL 301. HUMAN DESIGN: ANATOMY AND PHYSIOLOGY. Sem. 1, Class 2, cr. 3. Prerequisites: one year of life science and one year of general chemistry.

An analysis of the anatomy and physiology of the human organism at the molecular, cellular, and organ system levels. The fluids and gases which comprise the internal environment of the human organism will be examined to demonstrate basic homeostatic mechanisms. The anatomy of the integumentary, circulatory, urinary, and respiratory systems will be integrated with the study of their physiological functions.

BIOL 302. HUMAN DESIGN: ANATOMY AND PHYSIOLOGY. Sem. 2, Class 2, Lab. 2, cr. 3.

A continuation of BIOL 301. The gastrointestinal, nervous, endocrine, reproductive, and musculoskeletal systems will be examined. Regulatory mechanisms will be emphasized.

CHEMISTRY

Associate Professors: R. M. Hawthorne, H. D. Murdock.

CHM 111. GENERAL CHEMISTRY. Class 2, Lab. 3, cr. 3.

Required for all freshmen registered in the School of Agriculture or in biology options of the School of Science who are not in CHM 115 or 117.

CHM 112. GENERAL CHEMISTRY. Class 2, Lab. 3, cr. 3.
Continuation of CHM 111.

CHM 115. GENERAL CHEMISTRY. Class 3, Lab. 3, cr. 4.

Required of students majoring in chemistry, physics, and engineering who do not take CHM 117-126.

Laws and principles of chemistry, with special emphasis on topics of importance in engineering. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

CHM 116. GENERAL CHEMISTRY. Class 3, Lab. 3, cr. 4.
A continuation of CHM 115.

CHM 119. GENERAL CHEMISTRY. Class 2, Lab. 3, cr. 3.

A survey of general chemistry with emphasis on topics of importance to biology. Offered only for students in the technology programs.

CHM 255. ORGANIC CHEMISTRY. Class 3, cr. 3. Prerequisite: CHM 108, 110, 112, 116, or 118.

CHM 255L. ORGANIC CHEMISTRY LABORATORY. Lab. 3, cr. 1.
Laboratory experiments to accompany CHM 255.

CHM 256. ORGANIC CHEMISTRY. Class 3, cr. 3.
Continuation of CHM 255.

CHM 256L. ORGANIC CHEMISTRY LABORATORY. Lab. 3, cr. 1.
Laboratory experiments to accompany CHM 256.

COMPUTER SCIENCES

CS 220. INTRODUCTION TO ALGORITHMIC PROCESSES. Class 3, cr. 3. Prerequisite: one semester of mathematics beyond MA 151. Not open to students with credit in CS 210.

Introduction to the intuitive notion of an algorithm; representation of algorithms in narrative form as flow charts and as computer programs; general structure of com-

puters; computers experience using a procedure-oriented language in programming algorithms such as those used in elementary numerical calculations, sorting, stimulation of a random process and symbol manipulation; definition and use of functions, subroutines and iterative procedures; survey of a variety of significant uses of computers.

GEOSCIENCES

The following courses are administered by the Department of Physics.

GEOS 261. THE SOLAR SYSTEM. Sem. 1, Class 3, cr. 3.

A descriptive nonmathematical presentation of the results of modern astronomy, together with historical background.

GEOS 262. STELLAR ASTRONOMY. Sem. 2, Class 3, cr. 3.

A descriptive nonmathematical presentation of the results of modern astronomy, together with historical background.

DIVISION OF MATHEMATICAL SCIENCES

Acting Section Chairman: L. E. Bednar

Associate Professors: L. E. Bednar, L. A. Machtinger.

Assistant Professors: D. Lauer, R. Weatherwax.

Instructor: M. Kasper.

MA 2. PLANE GEOMETRY. Class 5, cr. 0. Credit: one unit for admission.

mathematical systems; mathematical reasoning; elementary set theory; elementary logic; mathematical proof; the number system of arithmetic; arithmetic algorithms.

MA 111. ALGEBRA. Class 3, cr. 3. (On West Lafayette Campus, given only for applied technology curricula. Not transferable from regional campuses except in applied technology curricula.)

This course satisfies the one unit of algebra required for admission.

MA 112. TRIGONOMETRY. Class 3, cr. 3. Not open to students with credit in MA 151 or 153.

For freshmen and others with two units of high school algebra.

MA 123. ELEMENTARY CONCEPTS OF MATHEMATICS I. Class 3, cr. 3. Not open to students with credit in MA 133.

Numeration systems; natural numbers;

MA 124. ELEMENTARY CONCEPTS OF MATHEMATICS II. Class 3, cr. 3. Prerequisite: MA 123. Not open to students with credit in MA 133.

The system of integers; rational numbers; polynomials; the real and complex number systems; elements of plane geometry; relations, functions, and graphs; elements of analytic geometry.

MA 130. MATHEMATICS FOR ELEMENTARY TEACHERS I. Class 3, cr. 3. Not open to students with credit in MA 123.

Numeration systems; finite mathematical systems; abstract mathematical systems, groups, fields; natural numbers through

rational numbers, a structural approach, properties, algorithms; mathematical reasoning and proof.

The sequence MA 130-131-132 fulfills the mathematical requirements for elementary education majors. MA 123-124 may be substituted for 130 in meeting this requirement.

MA 131. MATHEMATICS FOR ELEMENTARY TEACHERS II.
Class 3, cr. 3. Prerequisite: MA 130 or 124.

Informal study of metric and non-metric properties of geometric figures (primarily in a plane), measurement; introduction to foundations of Euclidean geometry.

The sequence MA 130-131-132 fulfills the mathematics requirements for elementary education majors. MA 123-124 may be substituted for 130 in meeting this requirement.

MA 132. MATHEMATICS FOR ELEMENTARY TEACHERS III
Class 3, cr. 3. Prerequisite: MA 130. Open only to students majoring in elementary education. Offered for the first time in the summer of 1972.

Integers, rationals, reals, a structural approach with proofs; algorithms, decimal and fractional notation; probability.

MA 147. ALGEBRA AND TRIGONOMETRY FOR TECHNOLOGY I.
Class 3, cr. 3.

College algebra and trigonometry for technology students. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.

MA 148. ALGEBRA AND TRIGONOMETRY FOR TECHNOLOGY II.
Class 3, cr. 3.

Continuation of MA 147. Not open to students with credit in MA 150. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.

MA 150. MATHEMATICS FOR TECHNOLOGY. Class 5, cr. 5. Not open to students with credit in MA 147 or 148.

College algebra and trigonometry for technology students. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.

MA 151. ALGEBRA AND TRIGONOMETRY. Class 5, cr. 5. Not open to students with credit in MA 153 or 154. Prerequisite: Two years of high school algebra or MA 147 and 148.

College algebra and trigonometry for students with inadequate preparation for MA 163. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.

MA 153. ALGEBRA AND TRIGONOMETRY I. Class 3, cr. 3. Not open to students with credit in MA 151.

MA 153-154 is a two-semester version of 151. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.

MA 154. ALGEBRA AND TRIGONOMETRY II. Class 3, cr. 3. Not open to students with credit in MA 151. Continuation of MA 153.

Does not carry credit towards graduation in the Schools of Engineering or the Division of Mathematical Sciences.

MA 163. INTEGRATED CALCULUS AND ANALYTIC GEOMETRY I. Class 5, cr. 5. Not open to students with credit in MA 161, 171.

Topics from plane analytic geometry. Introduction to differentiation and integration. Applications.

Designed for students with incomplete background in analytic geometry.

MA 164. INTEGRATED CALCULUS AND ANALYTIC GEOMETRY II. Class 5, cr. 5.

Continuation of MA 163. Completion of introductory study of topics in plane analytic geometry and the calculus of one variable.

MA 213. FINITE MATHEMATICS I. Class 3, cr. 3. Prerequisite: MA 151 or equivalent.

Elementary logic, basic set theory, finite mathematical models, elementary probability theory. Applications to problems in the biological and social sciences.

MA 214. FINITE MATHEMATICS II. Class 3, cr. 3. Prerequisite: MA 213.

Simultaneous linear equations, matrices, and vectors, linear programming, game theory. Applications to problems in the biological and social sciences.

MA 223. INTRODUCTORY ANALYSIS

I. Class 3, cr. 3. Prerequisite: MA 151 or equivalent. Should be preceded by MA 214. Not open to students with credit in MA 162 or 171.

Differential and integral calculus of one variable. Applications to problems in the biological and social sciences.

MA 224. INTRODUCTORY ANALYSIS

II. Class 3, cr. 3. Prerequisite: MA 221. Not open to students with credit in MA 172 or 261.

Partial derivatives; differentials; multiple integrals; introduction to differential equations. Applications to problems in the biological and social sciences.

MA 261. MULTIVARIATE CALCULUS.

Class 4, cr. 4. Prerequisite: MA 162.

Calculus: Indeterminate forms, parametric equations, solid analytic geometry, partial differentiation, multiple integrals infinite series.

MA 262. LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS.

Class 4, cr. 4. Prerequisite: MA 261.

Calculus: Linear algebra, elements of differential equations.

MA 351. ELEMENTARY LINEAR ALGEBRA. Class 3, cr. 3. Prerequisite: MA 261.

Systems of linear equations, finite dimensional vector spaces, matrices, determinants, applications to analytic geometry.

MA 361. ADVANCED CALCULUS AND DIFFERENTIAL EQUATIONS.

Class 3, cr. 3. Prerequisite: MA 351.

Eigenvalues, partial differentiations, total differential, maxima and minima, line integrals, differential equations.

MA 453. ALGEBRA I. Class 3, cr. 3. Prerequisite: MA 351, or consent of instructor. MA 453 and 454 are primarily for mathematics majors.

Fundamental properties of integers, polynomials, groups, rings, fields.

MA 547. ANALYSIS FOR TEACHERS.

Class 3, cr. 3. Prerequisite: MA 261.

Inequalities, sequences, functions, limits. Application to such basic concepts as length and area and their implications for the teacher of mathematics. The real number system and topology of the real line.

MA 548. ANALYSIS FOR TEACHERS

II. Class 3, cr. 3. Prerequisite: MA 547.

Elementary functions and basic theorems of calculus.

MA 550. ALGEBRA FOR TEACHERS.

Class 3, cr. 3. Prerequisite: MA 351 or graduate standing.

Definitions and elementary properties of groups, rings, integral domains, fields, vector spaces, and matrices, with major emphasis on the rings of integers, rational numbers, complex numbers and polynomials. Intended primarily for secondary school teachers.

MA 551. ALGEBRA FOR TEACHERS

II. Class 3, cr. 3. Prerequisite: MA 550.

A continuation of MA 550.

MA 556. INTRODUCTION TO THE THEORY OF NUMBERS. Class

3, cr. 3. Prerequisite: MA 261.

Divisibility, congruences, quadratic residues, Diophantine equations, the sequence of primes.

MA 563. ADVANCED GEOMETRY.

Class 3, cr. 3.

A critique of Euclid's *Elements* and a detailed study of Hilbert's postulates with an introduction to non-Euclidean geometry. Primarily for prospective secondary school teachers.

MA 581. INTRODUCTION TO LOGIC FOR TEACHERS. Class 3, cr. 3.

Prerequisites: MA 351 and 361.

Sentential and general theory of inference and nature of proof: elementary axiom systems.

STATISTICS

STAT 301. ELEMENTARY STATISTICAL METHODS I. Sem. 1 and 2. Class 3, cr. 3. Prerequisite: college algebra. Not open to students in the Division of Mathematical Science and Schools of Engineering.

A basic introductory statistics course with applications shown to various fields and

emphasis placed on assumptions, applicability, and interpretations of various statistical techniques. Subject matter includes frequency distributions, descriptive statistics, elementary probability, normal distribution applications, sampling distribution, estimation, hypothesis testing.

PHYSICS

Associate Professor: W. G. Brill

Assistant Professor: V. J. Raelson.

PHYS 152. MECHANICS. Class 4, Lab. 2, cr. 4. Prerequisite or corequisite: MA 164 or equivalent.

Statics; uniform and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; hydrostatics and hydrodynamics; simple harmonic and wave motion; sound.

PHYS 210. THE NATURE OF PHYSICAL SCIENCE I. Class 2, Lab. 3, cr. 3.

Development of basic concepts and theories in physical science; a terminal course.

PHYS 211. THE NATURE OF PHYSICAL SCIENCE II. Class 2, Lab. 3, cr. 3. Prerequisite: PHYS 210.

Continuation of PHYS 210. PHYS 210 and 211 will satisfy the physical science

requirement in the School of Humanities, Social Science, and Education.

PHYS 220. GENERAL PHYSICS. Class 3, Lab. 2, cr. 4. Prerequisites: MA 111 and 112, or 151, or equivalent.

Mechanics, heat, and sound for students not specializing in physics.

PHYS 221. GENERAL PHYSICS. Class 3, Lab. 2, cr. 4. Prerequisite: PHYS 220.

Electricity, light, and modern physics for students not specializing in physics.

PHYS 251. HEAT, ELECTRICITY, AND OPTICS. Class 5, Lab. 2, cr. 5. Prerequisite: PHYS 152.

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

School of Technology

Dean G. W. McNelly in Charge, West Lafayette

ARCHITECTURAL TECHNOLOGY

Associate Professor: H. S. Driggs, Jr.

ART 150. ARCHITECTURAL CONSTRUCTION I. Lab. 9, cr. 3. (Evening Divisions: Lab. 6, cr. 3 with outside assignments required.) Prerequisite: ART 116 or EG 110.

A study of wood frame construction through a semester project requiring planning, preliminary and working drawings, and a model of the framing system. Field trips may be included.

ART 210. HISTORY OF ARCHITECTURE I. Class 3, cr. 3.

Survey of styles and influences of cultures which led to the development of architecture from the earliest times to the present day.

ART 221. ARCHITECTURAL PRESENTATION. Lab. 6, cr. 2.
Prerequisite: EG 110 or ART 116.

Introduction to techniques of presentation drawings and models of buildings. Exercises in freehand sketching, perspective drawing, shades and shadows, and use of color in renderings. Survey of the application of color in buildings, construction, and purpose of various types of architectural models.

ART 222. ARCHITECTURAL CONSTRUCTION II. Lab. 9, cr. 3.
(Evening Divisions: Lab. 6, cr. 3 with outside assignments required.) Prerequisite: ART 150.

Preparation of preliminary and working drawings for an intermediate-sized commercial or institutional building.

ART 224. ARCHITECTURAL CONSTRUCTION III. Lab. 9, cr. 3.
(Evening Divisions: Lab. 6, cr. 3, with outside assignments required.) Prerequisite: ART 222.

Continuation of ART 222 with emphasis on larger and more complex structures.

ART 276. SPECIFICATIONS AND CONTRACT DOCUMENTS.
Class 2, cr. 2.

Preparation of general conditions and major phases of building construction specifications, study agreements, contracts, liens, and bonds.

ART 299. ARCHITECTURAL TECHNOLOGY. Cr. 1-4.

Hours and subject matter to be arranged with staff. Course may be repeated up to nine hours.

CIVIL ENGINEERING TECHNOLOGY

Associate Professor: R. L. Taylor.

CET 104. ELEMENTARY SURVEYING. Class 2, Lab. 3, cr. 3. Prerequisite or corequisite: MA 112, 150 or equivalent.

Measurement of distances, directions and angles, using the tape, level, compass, and transit. Computation of areas and traverses, lines and grades.

CET 160. STATICS. Class 3, cr. 3. Prerequisite: MA 154 or equivalent.

A study of forces acting on bodies at rest, including coplaner and noncoplaner forces, concurrent and nonconcurrent forces, friction forces, and hydrostatic forces. Centroids and moments of inertia are included. Practice in use of the slide rule will be included.

CET 208. ROUTE SURVEYING. Class 1, Lab. 3, cr. 2. Prerequisite: CET 104.

Preliminary and construction surveys for highways and railroads, including simple, compound, reverse, and easement curves, super-elevation of curves, profiles, grade lines, slope stakes, yardage estimates, and mass and haul diagrams.

CET 209. LAND SURVEYING AND SUBDIVISION. Class 1, Lab. 6, cr. 3. Prerequisite: CET 104.

Theory and practice of land surveying, subdivision, filing and recording deeds. United States governmental survey of public lands, laws of land surveying, descriptions and area computations for land surveys. Subdivision planning, calculations and plotting, water main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles.

CET 253. HYDRAULICS AND DRAINAGE. Class 3, cr. 3. Prerequisite: MA 150.

Basic hydrostatics, Bernouilli's equation, flow in water and sewer lines, overland and ditch drainage, and culvert size determination.

CET 260. STRENGTH OF MATERIALS. Class 3, cr. 3. Prerequisite: CET 160.

Study of stress-strain relationships, shear and bending moment diagrams, stresses and deflections of beams, axial loads, and combined stresses. Applied problems in the field of structural design.

CET 280. STRUCTURAL CALCULATIONS. Class 3, cr. 3. Prerequisite: CET 260.

Practice in the calculation of loads, reactions, shear, and moment for determinate structures. Introduction to indeterminate structures with emphasis on moment-distribution.

CET 299. CIVIL ENGINEERING TECHNOLOGY. Cr. 1-4.

Hours to be arranged with the staff. Primarily for third and fourth semester students. Subject matter to be assigned by the staff.

COMPUTER TECHNOLOGY

Associate Professors: L. F. Boness, W. H. Evans

CPT 100. COMPUTER UTILIZATION. Class 3, cr. 3.

An introduction to data processing techniques through the use of unit record and highspeed computer equipment. Emphasis will be on how computers can assist the potential user.

CPT 115. INTRODUCTION TO DATA PROCESSING. Class 4, Lab. 2, cr. 5. Not open to students with credit in CPT 116 or 117.

An introduction to computers and data processing. This course is intended to familiarize the student with techniques and problem solving aids such as flowcharting for solving problems by computer programming. Computer language fundamentals will be introduced.

CPT 116. INTRODUCTION TO DATA PROCESSING I. Class 3, cr. 3. Not open to students with credit in CPT 115.

CPT 116-117 is a two-semester version of CPT 115.

CPT 117. INTRODUCTION TO DATA PROCESSING II. Class 2, Lab. 2, cr. 3. Not open to students with credit in CPT 115.

Continuation of CPT 116.

CPT 122. COMPUTER MATH. Class 3, cr. 3. Prerequisite or corequisite: MA 147 or 150.

Selected topics in mathematics that are related to business and computer computations. Topics include: symbolic logic, binary, octal and hexadecimal number systems; determinates; matrices and linear systems.

CPT 133. ASSEMBLY LANGUAGE PROGRAMMING I. Class 3, Lab. 2, cr. 4. Prerequisite: CPT 115 or 116.

Programming of a digital computer at the machine language and assembly language levels with emphasis on the meticulous step by step development of a program. Topics include: computer hardware, stored program concepts, operation codes, addresses, flow diagrams and assembly language translators. In the laboratory, students write, process and debug programs using the computer on an open-shop basis.

CPT 134. ASSEMBLY LANGUAGE PROGRAMMING II. Class 3, Lab. 2, cr. 4. Prerequisite: CPT 131 or 133.

Advanced symbolic programming techniques, programming exercises and case studies are designed to familiarize the student with actual programming practices and to bridge the gap from the theoretical to the real world of data processing.

CPT 198. DATA PROCESSING PRACTICE I. Cr. 1.

Practice in industry with written reports of this practice for co-op students. May be repeated once.

CPT 200. COMPUTER PROGRAMMING FUNDAMENTALS. Class 2, Lab. 2, cr. 3.

The presentation of the basic elements of programming digital computers. There is a treatment of absolute and symbolic coding, magnetic tape functions, and random access processing. Major emphasis will be on compiler language (FORTRAN) programming.

CPT 220. NUMERICAL ANALYSIS I.
Class 2, Lab. 2, cr. 3. Prerequisite:
MA 150 and CPT 264.

Numerical methods necessary for finding solutions to mathematical equations and for analysis of tabulated data. A laboratory course consisting chiefly of the solution of specific problems by computer programming and other methods. Topics include: iterative and direct solutions of linear equations, matrix operations, and error analysis.

CPT 225. STATISTICAL METHODS.
Class 3, cr. 3. Prerequisite or
corequisite: CPT 264.

An introduction to elementary statistics with emphasis on the analysis of actual data. Topics include: description and representation of sample data, probability, theoretical distributions, sampling, estimating, correlation, regression, and computer statistical routines.

CPT 254. COMMERCIAL SYSTEMS APPLICATIONS. Class 3, cr. 3. Prerequisites: CPT 133 and INDM 200.

An introduction to the problems of developing integrated data processing systems for more efficient handling of the data flow in modern business. The student will produce reports needed by management, prepare flowcharts, design forms, and write procedures for designated systems.

CPT 261. RPG PROGRAMMING. Class 2, Lab. 2, cr. 3.

Computer programming using RPG, Report Program Generator. Study of the language structure, applications, and related utility programs.

CPT 264. FORTRAN PROGRAMMING. Class 2, Lab. 2, cr. 3. Prerequisite or corequisite: MA 150.

The structure and details of FORTRAN, a mathematically oriented compiler language. Numerous problems are solved on the computer to demonstrate the many facets of the language.

CPT 265. COBOL PROGRAMMING.
Class 2, Lab. 2, cr. 3. Prerequisite: A prior programming course.

A study of the programming language, COBOL, which is oriented toward data handling and processing tasks. The student will study the structure and details of COBOL and perform programming exercises as well as consider practical applications.

CPT 286. COMPUTER OPERATING SYSTEMS I. Class 2, Lab. 2, cr. 3. Prerequisites: CPT 132 and CPT 264.

An introduction to the computer operating systems and other systems software. Topics include: utility programs, job control monitors, program supervisors, loaders and link editors.

CPT 290. COMPUTER PROJECT. Cr. 1-4.

Independent study for sophomore students who desire to execute a complete computer-oriented project. Course may be repeated for credit up to six hours.

CPT 294. COMPUTER SEMINAR. Class 2, cr. 1. Prerequisite: An introductory computer course.

Current problems and issues in the computer field. Field trips are required.

CPT 299. COMPUTER TECHNOLOGY. Cr. 1-4. May be repeated for credit up to nine hours.

Hours and credit to be arranged. Primarily for students who desire to execute a project from start to finish on the computer.

CPT 300. INTRODUCTION TO COMPUTERS. Class 3, cr. 3 or Class 2, cr. 3.

A broad survey of computers, data processing, and applications. Punched cards preparation, unit record equipment, computer hardware, and programming principles and languages. Applications emphasize how the computer is used as a tool to assist the user.

CONSTRUCTION TECHNOLOGY

UNDERGRADUATE LEVEL Lower-Division Courses

BC 170. PLANS AND SPECIFICATIONS. Lab. 4, cr. 2.

Reading and interpretation of the contract

documents for construction. Emphasis is on the plans and specifications for a variety of structures.

BC 190. CONSTRUCTION EXPERIENCE I. Cr. 1.

Minimum of ten weeks of practical work experience in construction is required. Written and/or oral reports of this experience are required.

BC 195. CONSTRUCTION OBSERVATION. Lab. 2, cr. 1.

Directed observation and inspection of construction work in progress on or near the campus. May be repeated twice.

BC 198. CONSTRUCTION PRACTICE I. Cr. 1.

Practical experience in the construction industry with written reports of this experience for co-op students.

BC 200. MATERIALS AND METHODS. Class 2, cr. 2.

Nomenclature, properties, and methods of applications of materials used in construction.

BC 230. MECHANICAL AND ELECTRICAL SYSTEMS. Class 3, cr. 3. Prerequisite: PHYS 218 or equivalent.

A survey of systems for the supply and drainage of water, the heating and cooling of buildings, and the electrical power and lighting for buildings. This course is a composite of CNT 231, 232, and 233.

BC 270. ESTIMATING. Lab. 6, cr. 2. Prerequisite: CNT 170.

A study of methods to estimate quantities of materials required in construction. Practice in making quantity surveys. Introduction to estimating labor and costs.

BC 290. CONSTRUCTION EXPERIENCE II. Cr. 1.

Minimum of ten weeks of practical work experience in construction is required. Type of work should be different than that of CNT 190. Written and/or oral reports of this experience are required.

BC 298. CONSTRUCTION PRACTICE II. Cr. 1.

Practical experience in the construction industry with written reports of this ex-

perience for co-op students.

BC 350. FIELD OPERATIONS. Class 3, cr. 3. Prerequisite: PHYS 218 or equivalent.

A study of selected field operations including both equipment-intensive and labor-intensive tasks. The selection and management of equipment are emphasized.

BC 390. CONSTRUCTION EXPERIENCE III. Cr. 1.

Minimum of ten weeks of practical work experience in construction is required. Type of work should be different from that of CNT 190 and 290. Written and/or oral reports of this experience are required.

BC 398. CONSTRUCTION PRACTICE III. Cr. 1.

Practical experience in the construction industry with written reports of this experience for co-op students.

BC 450. PROJECT MANAGEMENT. Class 1, Lab. 5, cr. 3. Prerequisites: CNT 355 and 370.

The principles of project management are applied to a case study of an actual construction project. Topics include field organization, job supervision, field engineering, scheduling, labor relations, subcontract coordination, and contract management.

BC 455. CONSTRUCTION COMPANY MANAGEMENT. Class 3, cr. 3. Prerequisite: senior standing.

Business-policy and financial-management problems as they relate to construction companies. Company organization, contracts, bonds, insurance, accounting systems, project control, and labor relations.

BC 495. SENIOR PROJECT. Cr. 1-4.

Independent study for seniors encompassing a survey and analysis of an actual construction project.

BC 499. CONSTRUCTION TECHNOLOGY. Cr. 1-4.

Hours, subject matter and credit to be arranged by staff. Course may be repeated for credit up to nine hours.

ELECTRICAL ENGINEERING TECHNOLOGY

Assistant Professor: W. L. Stoakes.

EET 102. ELECTRICAL CIRCUITS I. Class 3, Lab. 3, cr. 4. Prerequisite or corequisite: MA 150.

A study of DC electrical circuits. Ohm's

Law, Kirchhoff's Laws, series and parallel circuits, power, introductory magnetism, ammeters, voltmeters, ohmmeters, inductance, capacitance, and an introduction to

alternating voltages, currents, and reactances.

EET 104. ELECTRONICS I. Class 2, Lab. 3, cr. 3. Prerequisite or co-requisites: EET 102 or consent of instructor.

Orientation topics on departmental and university services and industrial careers. Field trips related to career fields may be required.

An introduction to conductors, semiconductors, insulators, and the physical construction and elementary operation of electron tubes, solid-state diodes, and transistors. Includes characteristic curves and properties related to DC load lines. An introduction to the use of electronic calculators and digital computers.

EET 152. ELECTRICAL CIRCUITS II. Class 3, Lab. 3, cr. 4. Prerequisite: EET 102.

A study of DC and AC electrical circuits, network theorems, j operator, phasors, reactances, impedances, phase relationships, power, resonance, ideal and aircore transformers and an introduction to graphical techniques and transients.

EET 154. ELECTRONICS II. Class 3, Lab. 3, cr. 4. Prerequisites: EET 102, 104 and MA 150; prerequisite or corequisite: EET 152.

A study of the characteristics and applications of transistors, integrated circuits, and other solid-state devices. Includes rectifier circuits, wave-form interpretation, AC and DC load lines, biasing techniques, equivalent circuits, single and multistage class A small-signal amplifiers, and h parameters.

EET 204. ELECTRONICS III. Class 3, Lab. 3, cr. 4. Prerequisites: EET 152, 154 and MA 221.

A study of the applications of transistors, integrated circuits and other solid-state devices. Feedback principles as applied to amplifiers, oscillators, and regulated power supplies. Includes large-signal power amplifiers, special-purpose amplifiers, and AM and FM modulation and detection

techniques. Introduction to filters as applied to tuned amplifiers and rectifier circuits.

EET 212. ELECTRICAL POWER AND MACHINERY. Class 3, Lab. 3, cr. 4. Prerequisite: EET 152.

A study of power transformers, single and polyphase circuits, and an introduction to the National Electric Code. The study of DC machines and AC single and polyphase synchronous and induction machines.

EET 254. ELECTRONICS IV. Class 3, Lab. 3, cr. 4. Prerequisites: EET 154 and MA 221.

A study of transients, waveshaping techniques, switching circuits, multi-vibrators, logic gates, triggering and synchronizing techniques, binary arithmetic, and introductory Boolean algebra. Includes diodes, transistors, and integrated circuits in pulse and digital applications such as shift registers and ring counters.

EET 303. COMMUNICATIONS I. Class 3, Lab. 2, cr. 4. Prerequisites: EET 204, MA 222.

A study of AM and FM modulation and detection, receivers, transmitters, networks, filters, antennas, and transmission lines through the VHF frequency spectrum.

EET 316. TELEVISION I. Class 3, Lab. 2, cr. 4. Prerequisite: EET 204.

A study of television transmission and receiving systems. Includes analysis of transmitted signal, FM, video amplifiers, power supplies, synchronization, deflection alignment and antennas.

EET 331. GENERATION AND TRANSMISSION OF ELECTRICAL POWER. Class 3, Lab. 2, cr. 4. Prerequisite: EET 212.

A study of the generation and transmission of electrical energy. Includes techniques used by electric utilities for the protection of generating equipment and transmission lines, an introduction to the economic considerations of power plant operation, and three-winding transformers and methods of solving unbalanced three-phase systems.

GENERAL STUDIES

Professor: R. F. Schwarz.

GNT 220. TECHNICAL REPORT WRITING. Class 3, cr. 3.

Extensive application of the principles of good writing in industrial reporting, with

emphasis on the techniques of presenting information graphically as well as in a clear, concise written form.

INDUSTRIAL ENGINEERING TECHNOLOGY

Associate Professor: Raymond M. Bobillo

IET 104. INDUSTRIAL ORGANIZATION. Class 3, cr. 3. Not open to students who have completed IET 105 and /or 106.

A detailed survey of organizational, financial, marketing, and accounting activities; duties of management, planning, control, personnel, safety, wages, policy, and human factors necessary for effective management.

IET 120. SYSTEMS AND PROCEDURES. Class 3, cr. 3.

An introduction to the systems concept. Surveys recognizing and defining the system's problem; the management audit and tools for systems analysis; design and control of forms, work simplification, work measurement and procedures; operations research; punched card systems; management and administration; and organization of the systems function.

IET 204. TECHNIQUES OF MAINTAINING QUALITY. Class 2, Lab. 3, cr. 3. Prerequisite: MA 150.

An analysis of the basic principles of quality control. Includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X & R charts and uses of mechanical, electronic, air and light devices for checking and measuring to determine quality levels of acceptance.

IET 220. CRITICAL PATH ANALYSIS. Class 1, Lab. 3, cr. 2.

Detailed study of planning and control of a schedule by network techniques, including the time/cost analysis of CPM scheduling for application on construction projects, job shop scheduling and related problems. Includes an introduction to PERT and the use of the computer for network analysis.

IET 224. PRODUCTION PLANNING AND CONTROL. Class 2, Lab. 3, cr. 3. Prerequisites: MET 180 and APV 252.

Reproduction planning of the most economical methods, machines, operations, and materials for the manufacture of a product. The planning, scheduling, routing, and detailed procedure of production control.

IET 250. FUNDAMENTALS OF PRODUCTION COST ANALYSIS. Class 2, Lab. 2, cr. 3.

Surveys of fundamental mechanics of

accounting, principles of account classification, financial and operating statements, and the generation of cost data according to cost accounting principles. Surveys the generation of cost data according to the principles of engineering economy. Examines applications of cost accounting data and engineering economy cost data to specific management decision areas through selected case problems.

IET 262. MOTION STUDY AND WORK METHODS. Class 2, Lab. 3, cr. 3. Prerequisite: SPV 252; prerequisite or corequisite: MA 112 or equivalent.

The study of the various techniques of motion study including process charts, operation charts, multiple activity charts, micro and memo motion study, therbligs, the movie camera, along with actual practice in their use. Includes study and application of the basic principles used to develop better methods of performing work.

IET 266. WORK MEASUREMENT AND INCENTIVES. Class 2, Lab. 3, cr. 3. Prerequisite: IET 262.

A study of the fundamentals of time study and work measurement with actual practice in their use. Includes stop watch time study, measuring work with movie camera, the establishment of allowances by both stop watch and work sampling studies, the establishment and use of predetermined time values, and the construction and use of work measurement formulae.

IET 272. JOB EVALUATION. Class 2, cr. 2. Prerequisites: SPV 252 and MA 112.

A survey of the basic principles and significance of job evaluation. An analysis of current practices and techniques used in job analysis, job descriptions, and job evaluation.

IET 280. WAGE INCENTIVES. Class 2, cr. 2. Prerequisites: IET 260 and 272.

An analysis and study of the various types of wage incentive plans, their significance, adaptability, effectiveness, and equitability. A systematic appraisal of the basic objectives and currently used techniques in the administration of wage incentive programs.

IET 296. INDUSTRIAL TECHNOLOGY CASE PROBLEMS. Class 2, cr. 2.

Application of theories developed in the several industrial technology courses to select general case problems—to provide practice in the integration of principles.

IET 312. MATERIALS HANDLING. Class 3, cr. 3. Prerequisite: IET 268.

A survey of materials handling elements, the unit load, packaging, bulk handling, the economics of materials handling, improving existing handling methods, justification for handling equipment, special handling techniques, and the management of the materials handling division in the industrial organization.

MECHANICAL ENGINEERING TECHNOLOGY

Associate Professor: F. R. Lisarelli.

MET 100. APPLIED ENGINEERING COMPUTATIONS. Lab. 3, cr. 1.

Practical application of the proper use of the slide rule, desk calculator and introduction to the electronic computer and dimensional analysis.

MET 180. MATERIALS AND PROCESSES. Class 2, cr. 2.

Application and characteristic, both physical and chemical, of the materials most commonly used in industry; the mechanical processes by which materials may be shaped or formed.

MET 200. POWER SYSTEMS. Class 3, cr. 3. Prerequisite: PHYS 220.

A survey of steam and nuclear power plants, internal combustion engines, gas turbines, pumps, compressors, fans and blowers, refrigeration. Some theory in thermodynamics, combustion of fuels, heat transfer. Power generation and application to various fields with special mention of transportation.

MET 204. PRODUCTION DRAWING. Lab. 6, cr. 3. Prerequisite: EG 110; prerequisite or corequisite: MET 180.

Preparation of working drawings from layouts, drafting simplification, functional dimensioning, assembly drawings, detailing of machine elements, working with manufacturers' catalogs, applying fits, limits and tolerances to dimensions for in-

terchangeable manufacture; information as to material, physical treatment, and manufacturing processes. The student works from layouts with a minimum of information so that self reliance in detailing may be developed.

MET 209 APPLIED STATICS. Class 3, cr. 3. Prerequisite or corequisite: MA 150.

Force systems, resultants and equilibrium, centroids of areas and centers of gravity of bodies, trusses, frames, beams, friction and moments of inertia of areas and bodies.

MET 211. APPLIED STRENGTH OF MATERIALS. Class 4, cr. 4. Prerequisite: MET 210.

Principles of applied strength of materials primarily with reference to mechanical design.

MET 216. MACHINE ELEMENTS. Class 4, cr. 4, or Class 3, Lab. 2, cr. 4. Prerequisites: MET 204, 211, and MA 222.

A survey of the more important elements used in tools and machines, and their general characteristics pertaining to application, operational behavior, efficiency, economy, and standardization.

MET 232. DYNAMICS. Class 3, cr. 3. Prerequisites: MET 210, 211, MA 222.

Basic fundamentals of dynamics: displacement, velocities, accelerations, work, energy, power, impulse, momentum, and impact.

MET 236. JIG AND FIXTURE DESIGN. Lab. 6, cr. 3.

Application of principles in the design and construction of drilling, milling, reaming and assembly jigs and fixtures; information related to materials, heat treatment and cost estimating. Gaging characteristics, selection and design for interchangeable manufacture.

MET 256. MATERIAL FABRICATION.
Class 2, cr. 2. Prerequisite or corequisite: MET 180.

A study of the physical characteristics of metals and on-metals with respect to their behavior during fabrication; methods of material removal; elementary aspects of

machine tool operation and tooling requirements.

MET 300. APPLIED THERMODYNAMICS. Class 3, cr. 3. Prerequisite: MET 100, 200, MA 222.

Fundamentals of thermodynamics including applications of first and second laws, enthalpy, entropy, reversible and irreversible processes.

MET 330. INTRODUCTION TO FLUID POWER. Class 3, cr. 3.

A study of the development, transmission and utilization of power through fluid power circuits and controls.

NURSING

H. R. Johnson, Head of the Department

Section Chairman: B. A. Schaapveld.

Associate Professor: B. A. Schaapveld

Assistant Professors: R. J. Alexander, M. Bourgeois, I. Brunner, G. Chamberlain, S. Haney, P. Babcock.

Instructors: E. Hayes, M. Graybill, S. Kowalski, Z. New, R. Shearer, M. Wickert.

NT 115. NURSING I. Class 4, Lab. 6, cr. 6.

This course reviews the progress of nursing through the present introducing current legal and ethical aspects. The nursing process is utilized to present basic nursing concepts emphasizing basic human needs, interpersonal relationships, and dynamics of behavior. Fundamental skills and patient care are developed through classroom methods, university and hospital laboratories, and students' oral and written communication.

NT 116. NURSING II. Class 4, Lab. 6, cr. 6.

The content of this course, utilizing the nursing process, emphasizes the administration of medications, the nursing care of adults and children with selected medical-surgical entities, and the principles of patient-family teaching. Surgical intervention as a stress situation is included in both theory and laboratory experience. Content is based upon scientific principles from allied fields. Laboratory experiences are provided in hospitals and other agencies.

NT 224. NURSING III. Class 5, Lab. 15, cr. 10.

The content of this course emphasizes the

use of the nursing process in the care of adults and children who experience complex medical and surgical problems.

NT 225. MATERNAL AND CHILD HEALTH NURSING. Class 3, Lab. 6, cr. 5.

The nursing concepts in maternal and child nursing are related to the emerging family group throughout the maternity cycle and preschool age. Deviations from the normal maternity cycle and diseases and conditions unique to childhood are included. Emphasis will be placed on the physical, social, and emotional responses to health and illness. Appropriate community resources are utilized as available.

NT 240. PSYCHIATRIC — MENTAL HEALTH NURSING. Class 3, Lab. 6, cr. 5. Prerequisite: NT 116.

NT 240 stresses the patient's behavior and the nurse's reaction. Based on knowledge previously acquired, this course enlarges upon the principles and techniques of the nurse's role in the multiple approaches and therapies currently used in treating patients who are emotionally ill. Laboratory experiences are provided in hospitals and other community agencies.

NUR 280. ISSUES IN NURSING. Class 3, cr. 3.

Analyze the history of nursing and its relationship to the role of the nurse in society and the professional nursing associations of today. Study challenges

responsibilities, and employment opportunities for the registered nurse. Examine current trends in health care, professional issues, nursing practice standards, legal aspects of nursing, and implications of health legislation.

SUPERVISION

Associate Professors: J. R. Blackwell, R. Bobillo.

Assistant Professor: T. F. Brady.

SPV 100. SUPERVISION LECTURES. Class 1, cr. 1.

Introduction and orientation to the Department of Supervision and an overview of the supervision and personnel functions in the world of work.

SPV 252. HUMAN RELATIONS IN SUPERVISION. Class 3, cr. 3.

Study of the basis and organization of individual and group behavior. Special emphasis on typical supervisory relationships.

SPV 268. ELEMENTS OF LAW. Class 3, cr. 3.

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government, and covering law with emphasis on judicial review, and court jurisdiction and procedure generally and basic law in particular.

SPV 331. OCCUPATIONAL SAFETY AND HEALTH. Class 3, cr. 3. Prerequisite: consent of instructor.

A presentation of those aspects of occupational safety and health which are most essential to the first-line supervisor. Emphasis is placed on developing an understanding of the economic, legal and social factors related to providing a safe and healthful working environment.

SPV 350. APPLIED CREATIVITY FOR BUSINESS AND INDUSTRY. Class 3, cr. 3.

A study of the ways individuals can become more creative and how they can develop an environment which encourages creativity from employees.

SPV 362. COOPERATIVE OCCUPATIONAL INTERNSHIP. Cr. 3-6. May be repeated to a maximum of 24. Consent of department required.

Organized and supervised work experience directed toward preparation for supervisory, personnel and related positions.

Planned and supervised by the departmental staff in cooperation with employing organizations.

SPV 374. ELEMENTS OF SUPERVISION. Class 3, cr. 3.

Introduction to and overview of the fundamental concepts of supervision. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, his relations with others and his personal development.

SPV 375. BASIC METHODS OF TRAINING FOR SUPERVISORS. Class 3, cr. 3.

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the supervisor as a trainer.

SPV 376. SUPERVISION AND PERSONNEL PROBLEMS. Class 3, cr. 3. Prerequisite: SPV 374 or consent of instructor.

Analysis and discussion of selected case problems concerning typical personnel situations faced by the supervisor. Emphasis directed toward development of student attitude, philosophy, analytical ability and problem solving skills within the working environment.

SPV 462. SUPERVISED WORK EXPERIENCE. Cr. 3. Consent of department required.

Supervised work experience directed toward providing orientation, background, and insight into work situations and operations.

SPV 474. CONFERENCE LEADERSHIP TRAINING. Class 2, Lab. 3, cr. 3.

Understanding the role of the conference in the world of work, with practical applications of the various techniques of conference leadership, and an understanding of group dynamics in the conference situation.

SPV 567. SUPERVISED FIELD PRACTICE IN TRAINING AND DEVELOPMENT. Cr. 3.

SPV 574. MANAGERIAL TRAINING AND DEVELOPMENT. Class 3, cr. 3. Prerequisite: SPV 374. Open to seniors and graduate students only.

Review of current managerial education and development theories and practices; discussion of social, economic, and political changes affecting business and the work of managing; implications of these changes for individual manager development and growth.

SPV 577. ORGANIZATION AND ADMINISTRATION OF TRAINING AND DEVELOPMENT. Class 3, cr. Prerequisite: SPV 375. Prerequisite or corequisite: SPV 574. Open to seniors and graduate students only.

The function and management of training and development in the world of work.

SPV 590. INDIVIDUAL RESEARCH PROBLEMS IN SUPERVISION AND PERSONNEL. Cr. 1-6. Consent of department required.

Opportunity to study specific problems in the field of supervision and personnel under the guidance of a qualified faculty member within the department. Does not include thesis work.

ADMINISTRATIVE AND INSTRUCTIONAL STAFF

RINDA J. ALEXANDER (1976) ... Assistant Professor of Nursing
A.D. Purdue, 1971; B.S. Purdue, 1975.

GEORGE T. ASTERIADIS (1971) . Associate Professor of Biology
B.S., State University of New York at Oswego, 1966; Ph.D., Purdue, 1971.

PATRICIA A. BABCOCK (1976) ... Assistant Professor of Nursing
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G. WILLIAM BACK (1969) Director of Business and Administrative Services
B.S., Southern Illinois, 1969.

LOUIS E. BEDNAR (1965) Associate Professor of Mathematics, Section Chairman
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B.A., St. Thomas, 1967; M.A., St. Thomas, 1968.
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- PAUL H. COX (1976) Dean for Academic Services
B.S., Texas Christian University, 1962; Ph.D., University of Oklahoma, 1968.
- RUTH DANALD (1967) Instructor in Modern Languages
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- DAVID S. DONALDSON (1976) ... Librarian and Associate Professor of Library Science
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- WALTER H. EVANS (1968) Associate Professor of Computer Technology
B.A., Purdue, 1954; M.A., Michigan, 1959.
- JEENE W. GAINES (1964) Associate Professor of Psychology
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- MARY LOU GRAYBILL (1973) Lecturer in Nursing
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- SALLY N. HANEY (1974) Assistant Professor of Nursing
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- DOROTHY M. HARRER (1969) Lecturer in Foods and Nutrition
B.S., Montana State, 1938.
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- ELIZABETH J. HAYES (1974) Instructor in Nursing
B.S., Indiana State, 1972.
- JAMES C. HAYES (1970) Assistant Professor of Engineering
B.S., Notre Dame, 1964; M.S., 1967; Ph.D., 1970.
- HOWARD JABLON (1966) Professor of History
B.A., Hofstra, 1961; M.A., Rutgers, 1962; Ph.D., 1967.
- MICHAEL A. KASPER (1970) Instructor in Mathematics
B.S., St. John Fisher, 1964; M.S., Notre Dame, 1970.
- DAVID P. KONZELMANN (1966) ... Admissions Officer with the rank of Assistant Professor
B.S., Butler, 1960; M.S.Ed., Purdue, 1964.
- SANDRA L. KOWALSKI (1973) Instructor in Nursing
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- LAURENCE H. KRAUSE (1976) ... Assistant Professor in the Community College
B.S., Washington University, 1950; Masters of Education, American University, 1964.
- DAVID G. KULAKOWSKI (1973) Computer Center Manager
A.A.S., College of Automation, 1971.
- DENNIS E. LAUER (1968) Assistant Professor of Mathematics
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- FREDERICK R. LISARELLI (1946) Associate Professor of Mechanical Engineering Technology
B.S., Alabama, 1938; M.A., Columbia, 1946.
- BARBARA M. LOOTENS (1965) Assistant Professor of English
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- LAWRENCE A. MACHTINGER (1972) Associate Professor of Mathematics
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- ROBERT A. MARTIN (1969) Assistant Professor of Industrial Management
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B.S., Utah State, 1950; M.S., 1953; Ph.D., Utah, 1970.

- HOWARD D. MURDOCK (1946) . . . Associate
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B.S., Notre Dame, 1937; M.A., 1940.
- ZOE J. NEW (1976) Instructor
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B.S., University of Southwestern Louisiana,
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- JOHN J. PAPPAS (1976) Associate
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B.A., Rutgers, 1955; M.A., Columbia, 1957;
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- HAROLD W. PHILLIPS (1968) Assistant
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- CLYDE L. PORTER, JR. (1968) . . . Professor
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B.S., South Carolina, 1957; M.S. 1959; Ph.D.,
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- VERNER J. RAELSON (1966) Assistant
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- GEORGE M. ROYSTER III (1974) Registration
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- ROBERT F. SCHWARZ (1952) Professor
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- RUTH A. SHEARER (1975) Instructor
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- HENRY SOKOLOWSKI (1968) Assistant
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B.A., Purdue, 1967; M.A., 1968.
- JOHN J. STANFIELD (1964) Assistant
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B.S.E.E., Iowa State, 1949; M.S.E.E., Purdue,
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- RICHARD L. TAYLOR (1966) Associate
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B.S.C.E., Purdue, 1963; M.S.C., 1965.
- JOHN W. TUCKER (1972) Chancellor;
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State, 1952; Ed.D., Harvard, 1957.
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- MARGARET A. WICKERT (1975)
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- MARGARETHA W. WOODWARD (1966) . .
Associate Professor
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B.A., South Africa, 1941; M.S., 1944; Ph.D.,
Virginia, 1949.

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1977

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1977 Fall Semester
August 29
 Classes begin
November 24 & 25
 Thanksgiving vacation
December 14
 Classes end
December 20
 Finals end

1978

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1978 Spring Semester
January 9
 Classes begin
March 4-12
 Spring vacation
April 29
 Classes end
May 5
 Finals end
May 11
 Commencement

To compensate for the Monday, September 5 holiday, Wednesday, December 7, will be considered a Monday for class attendance purposes. Classes that normally meet on Wednesday will not meet on Wednesday, December 7, 1977.

